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PART FIRST.

Original Communications.

ART. I.—*Extraordinary Effects of a Stroke of Lightning.—Singular Phenomena.* By JOHN LE CONTE, M.D., of Savannah, Georgia.

ALTHOUGH the striking phenomena—the details of which are subjoned—did not occur under my own observation, yet, having subsequently inspected the several localities, and having strictly interrogated a number of trustworthy and independent witnesses, I trust the facts will be admitted to bear a high degree of authentication, while they are divested of any ambiguity which the vague impressions of a *single* individual might cast upon them. Should the following statements, with the accompanying reflections, be thought subservient to the cause of humanity, or science, they are offered for insertion in the New York Journal of Medicine and the Collateral Sciences.

On Sunday, the 2d of July, 1843, about 3 o'clock, P. M., five negroes were simultaneously prostrated by a single stroke of lightning, on a plantation situated near the southern boundary line of Liberty County, Georgia, in latitude about 31° 30′. The sun was shining brilliantly at the time, and a greater portion of the visible hemisphere presented the usual serenity of the summer sky. A singular and rather angry-looking cloud had, for a short time previously, been observed near the verge of the south-eastern horizon, from which occasionally proceeded the low rumblings of very distant thunder. But nothing in the appearance of the heavens betokened the immediate proximity of a thunder-storm, or prepared them for the terrible electrical explosion which followed. Not a drop of rain had yet fallen, and the earth was quite dry. Such was the condition of things, when suddenly the whole atmosphere in the neighborhood was momentarily illuminated by what appeared to be an universal flash, which was accompanied, or rather instantly succeeded, by a *single* astounding report. No dust was observed to rise from the ground, nor any other evidence of mechanical violence. No thunder was heard after this explosion; the cloud quickly dispersed, precipitating only a

little rain a few minutes after the accident; and, in the course of an hour, the atmosphere resumed its usual tranquillity. The five negroes were taken up in a state of insensibility, amounting to apparent death. There was no white person on the farm at the time, and nearly two hours elapsed before medical assistance could be rendered. In the details annexed, I have endeavored to render the history of each case as complete and accurate as is consistent with the character of the evidence and the attending circumstances. It is to be regretted that a more minute and rigorous examination of the bodies of those killed was not made, for it is possible that marks of the effects of electricity, and indications of the causes of death, might have been discovered.

Case 1.—A negro girl, Adeline, aged about thirteen years, was up in the branches of a small mulberry tree, twenty feet high, and standing sixteen feet in front of a line of negro houses, which extended parallel to a wood situated one hundred yards in the rear of the same. She was engaged in throwing down the fruit for her little companion below. Every principle of life seems to have been instantly extinguished by the intensity of the electrical shock:—her body had to be taken down from the branches of the tree where it had lodged. No marks of external injury observed.

Case 2.—Another female child, Kitty, aged about six years, was standing immediately under the tree. She was instantaneously killed. No superficial marks of injury observed.

Case 3.—Chloe, an adult woman, aged forty years, was walking about ten feet more remote from the base of the tree than the latter child; and also, *about five feet more distant than the two who survived the shock*, viz.: than cases 4 and 5. She was instantly killed. No marks of injury recognized, excepting a burnt spot, the size of a dollar, under the right axilla. Her clothes were set on fire; but this was probably occasioned by the breaking of a tobacco-pipe which she was smoking at the time, and which scattered the ignited contents over her cotton garments. In the three cases above-mentioned, all the ordinary attainable means of resuscitation were tried without success.

Case 4.—Charlotte, an adult woman, aged twenty-nine years, *was standing half-way between cases* 2 *and* 3, and, consequently, about five feet from the root of the tree. After remaining in a state of insensibility for some time, she gradually recovered her consciousness. A dose of castor oil was then administered. The skin on her right shoulder was abraded for a space as large as a dollar. Her clothes were rent into shreds; on the right side of her body, the skin was blistered and marked with discolored streaks, which extended anteriorly on the lower portion of the abdomen towards the pubes. A small streak likewise extended along the interior aspect of the right arm. She complained of pain in the stomach and bowels for *three weeks*. No vomiting or burning in the hands and feet, as was experienced in the next case. She has been married several years, but has never been pregnant. Her *menstruation* was perfectly *regular* prior to the reception of the shock; but has *since that time* been very *irregular;* sometimes having *two periods* per month, and then escaping *two months*. The flow has also been much diminished in *quantity*. Her health has not been very good since she was struck; manifestly resulting from her menstrual irregularity. A recent copious bleeding has afforded her evident and immediate relief. Her reproductive functions appear to continue dormant.

Case 5.—Sarah, a woman aged, *at least*, seventy years, was standing immediately beside the last. She likewise gradually recovered her consciousness. No medicine was administered. Her clothes were rent; and after a few days, marks of discoloration were manifested along the right arm and right side of the trunk. A violent paroxysm of vomiting followed the restoration to a state of sensibility; which continued, with occasional interruptions, for ten or twelve hours. As in the preceding case, she complained very much of pain in the region of the stomach and bowels, for at least two weeks after the accident. A troublesome sensation of *burning* was experienced in the palms of her hands and the soles of her feet; and in the course of two or three weeks a swelling made its appearance under the right foot, which ultimately resulted in the exfoliation of a portion of the thick indurated epidermis of that part, about one and a half inches in diameter.

The *catamenial discharge*, which had, in accordance with the ordinary arrangement of nature, ceased for more than twenty years, *was completely, and thus far, permanently re-established!!* At least, a discharge from the genital organs, having all the obvious and sensible physical characters of the *catamenia*, and observing, with vigorous exactitude, its peculiar law of periodicity, has been established, and continues to recur, with the utmost regularity, up to the present time (August, 1844), after the lapse of more than a year! She has not missed a single menstrual period since she was struck by lightning. To use a liberal paraphrase of her own language, her "Moons return as regularly as when she was a young woman." The flow comes on with the usual premonitory symptoms. Her *mammæ* have undergone an obvious *preternatural enlargement*, apparently originating in a sympathetic irritation, emanating from the establishment of the reproductive functions. This woman has had but one child, to which she gave birth, soon after reaching womanhood. The catamenial flux is represented to have been regular up to the period of its natural cessation, between forty-five and fifty years of age; subsequent to which epoch, she has presented all the appearances ordinarily attending the gradual approach of the state of senility in a vigorous constitution. The electrical shock, likewise, completely relieved her of a troublesome *strangury* which had harassed her for four or five years. Very recently she has, occasionally, had a slight recurrence of the same complaint; although under a much milder form. Otherwise, her health continues perfectly good; there being, so far as symptoms show, not the slightest indication of the supervention of organic disease of the uterus.

I regret that no opportunity has been afforded for examining, in a *critical manner*, the condition of the genital organs, and the character of the fluid which is periodically discharged; as it would have effectually removed any degree of scepticism which might possibly arise in the minds of some persons, on the score of the vagueness of negro testimony. I trust, however, that the system of minute interrogation and rigid cross-examination, which was adopted in eliciting the facts, has precluded the possibility of the occurrence of any material error; especially when it is considered that there could be no possible motive for practising deception, in a matter of this kind, on the part of a faithful old slave. Under any view of the question there can be no reasonable doubt concerning the strict menstrual periodicity of the phenomenon; and it would be difficult to assign any other than a functional origin to a discharge observing such a law.

A comparison of the details of the two cases which survived the electric shock, manifests a remarkable analogy in the appearances presented, and in the symptoms which supervened. In both instances the clothes were similarly torn—marks of discoloration indicated the passage of the lightning over the surface of the skin; and the same persistence of pain in the region of the stomach and bowels, existed during the progress of convalescence. This latter symptom, common to both—together with the continued vomiting in the last case—doubtless arose from the violent shock which the *solar plexus* of the ganglionic system of nerves sustained, by the powerful operation of the electrical energy.

A remarkably striking impression was made upon the uterine functions in both instances: in the one case, causing manifest derangement of the function of menstruation, as indicated by the irregularity of its recurrence, and the paucity of the flux:—in the other, we observe the abnormal phenomenon of the apparent re-establishment of the catamenia, after more than 20 years cessation under the natural progress of superannuation. Here we find a remarkable example of the production of diametrically opposite effects from the operation of the same agent—under, apparently, identical circumstances—and acting, seemingly, with equal degrees of intensity on the animal economy. Perhaps this may be considered a natural illustration of the truth of the homœopathic aphorism, "*similia similibus curantur*;" but admitting the validity of the axiom, it is quite clear that Nature did not, in these instances, accomplish the end by administering *infinitesimal* shocks of electricity!! Nor does this fact present anything either novel or paradoxical in its aspect, except when observed through the microscopic optics of homœopathy. Accordingly we find the essence of this so-called new doctrine promulgated in isolated instances from the earliest times, and inculcated, not only in our best classical productions, but even in our nursery maxims. Homer, Ausonius, and the precepts of the Schola Salanituria, furnish distinct allusions to it. Shakspeare says—

> "Take thou some new infection to thine eye,
> And the rank poison of the old will die."

Butler remarks—

> "As wounds by wider wounds are heal'd,
> And poisons by themselves expell'd."

But, independently of such authorities as these, every day's experience furnishes us with similar examples. One instance is sufficient for my purpose:—Are not burns frequently cured by the application of powerful stimulants? Such remedies produce the desired result, not by the *stronger*, but by the *opposite* impressions which they make; so that, after all, they operate on the antipathic principle. The effects of electricity in either "producing or removing nervous apoplexy, according to circumstances, were beautifully illustrated by the late Dr. Currie, who found, that by passing an electric shock through the head of a rabbit, he could alternately stupefy and revive it for almost an indefinite number of times" (vide I. Fletcher's Elem. of Gen. Path. p. 489. Edin. 1842). Nor are these contrary results confined to the manifestations of vital phenomena; we observe something analogous in the secret and hidden operations of the inorganic world. Thus, in chemistry, we see the influence of electricity in promoting at one time the decomposition of

bodies, and at another time their re-formation;—at one time in the form of a galvanic current causing the elements of water to separate, and exhibiting them in the form of gases;—at another time, in the condensed form of an electric spark causing the self-same gases to re-unite, and become identified with water. It appears, therefore, that this doctrine has a philosophical foundation; although all that is useful or valuable in it, has been carried off in the cloud of infinitesimal globuli, which the weavers of this precious hypothesis have so ingeniously thrown over the subject. The inexorable exclusiveness of its champions has brought every remedy within the limits of the doctrine, and thus converted it into a bed of Procrustes;—whilst the infinitude of symptoms which are enumerated as excited by each individual medicine (495 for chamomile flowers, and 1400 for nux vomica), must be regarded as the "consummation of the sublimity of absurdity." The history of this fantastic theory affords a striking confirmation of the remark of Cicero—"nihil tam absurdum, quod non dictum sit ab aliquo philosophorum." To return to my subject.

In consideration of the seeming restoration of the catamenial flux,—taken in connection with the manifestation of a correlative sympathy in the mammary glands,—in a woman advanced beyond 70 years of age; an important physiological inquiry arises with regard to the possibility of impregnation taking place at her period of life. The somewhat neglected observations of Kirkringius, in 1672; the dissections of Mr. Cruikshank, in 1797; those of Dr. Robert Lee, in 1831-2; the recent ones of MM. Gendrin and Negrier, in 1839; together with the still later researches of Mr. Girdwood, and of MM. Raciborski, Bischoff, and others,—have clearly demonstrated that *each act of menstruation is connected with the maturation and discharge of an ovum.* To use the language of M. Raciborski, the menstrual discharge is "an epiphenomenon (accessory phenomenon) of an important function devolved upon the ovaries, viz., the successive formation and separation of the ova and graafian vesicles" (Medico-Chirurg. Rev. for October, 1843, p. 510, from *L'Experience*). If, therefore, the ovaria should retain their appropriate functions until an advanced age, or if they should regain their formative powers through the operation of any efficient cause, and thus furnish new and healthy ova, which capacity is *generally* indicated by the uterus continuing, or reassuming, its menstrual action, there is no good physiological ground for denying that impregnation *might* take place under favorable circumstances. Accordingly, a number of well-authenticated examples of late fecundity are to be found on record. Out of ten thousand pregnant females registered at the Manchester Lying-In Hospital, in England, Mr. Roberton found that 436, or 43.6 per thousand, were upwards of forty years of age; above fifty years of age, there were but three cases, the proportion dwindling to 0.3 per thousand; that is, one instance of pregnancy in 3333.3. The eldest of the three had reached her fifty-fourth year. Mr. Roberton observes, that as far as he could ascertain, and particularly in the three cases above fifty years, the *catamenia continued up to the period of conception* (Edin. Med. and Surg. Journ., vol. 38, p. 254, Oct., 1832). Haller has given still more extraordinary instances of births in advanced age, viz. one at fifty-eight, one at sixty-three, and another at seventy! We are not informed whether menstruation continued up to the epoch of conception in these cases. Dr. W. P. Dewees has recorded the case of an unmarried woman, who had a child when she

was sixty-one years old! The doctor supposed that there were indications of a serous discharge anterior to impregnation, which furnished evidence of returning youthfulness. (Treatise on Diseases of Females, fifth ed., Phil., 1835, p. 89-90.) Capuron quotes several cases of child-bearing, in advanced life, among which are the following:—Pliny records the case of Cornelia, of the family of the Scipios, who, at the age of sixty, bore a son, who was named Volusius Saturninus. Marsa, a physician of Venice, mentions that he treated a woman for dropsy, who was really pregnant; but he was deceived by her age, which was sixty. Valescus de Tarenta mentions a woman who continued to menstruate beyond sixty, at which age she bore her last child. (Médecine Légale, etc., p. 92-3 et 98; as cited by Dr. W. F. Montgomery, on the Signs and Symptoms of Pregnancy.—Dunglison's Am. Med. Library, Phil. 1839, p. 112.) In the statement sent to Parliament in 1755, by Bartholomew Mosse, when endeavoring to procure a grant for the Dublin Lying-In Hospital, he mentions that eighty-four of the women delivered under his care were between the ages of forty-one and fifty-four; four of these were in their fifty-first year, and *one* in her fifty-fourth. (Montgomery, Op. cit., p. 110, 111.) Mrs. Ashley, wife of John Ashley, of Firsby, near Spilsby, was delivered of twins in May, 1816, in the fifty-fourth year of her age. (Edin. Annual Register, vol. 9, part 2, p. 508.) Colomb adduces a similar case, and Knebel two, one of fifty-two years, and the other of fifty-four. La Motte gives a very circumstantial account of two cases of much interest, in reference to this point, in both of which he attended the patients. The first was that of a woman, who lived a life of celibacy up to the age of forty-eight, and then married, in the hope that her age precluded the possibility of having children, her menstruation also having become irregular; yet she soon conceived, and in due season was delivered. The other case is still more remarkable: the woman declined marriage until she was fifty-one, from the fear of having a family; but soon became pregnant, and was delivered after a labor of only two hours. Dr. Montgomery adds a case on the authority of Dr. Labatt, of Dublin, of a female marrying at forty, and conceiving and bringing forth a living child, for the *first time*, when past the age of fifty. (Montgomery, Op. cit., p. 111.)

Dr. Dewees remarks, that "impregnation, after the final cessation of the menses, is of extremely rare occurrence, and should be ranked among those extraordinary instances, in which the system makes an attempt to renew certain lost functions, or to repair lost parts." He further maintains, that "a healthy menstrual action is a *sine quâ non* to impregnation, in the earlier parts of life; it would seem, therefore, to be indispensable to this end, at the latter period: and where impregnation has obtained, we cannot well question *but it has been preceded by this action.*" (Op. cit., p. 93.) There is too much exclusiveness in this language: such reasoning cannot set aside the numerous well-attested instances of fecundity existing among women who have never menstruated or had vicarious discharges of any kind. Even Aristotle intimates, that it is possible some women may conceive without having the catamenia. (Hist. Animal., Lib. 7, c. ii.) Morgagni, Frank, Capuron, Foderé, Sir E. Home, and others, have recorded cases of fecundity without menstruation. It is sufficient to notice only a few recent examples in illustration of this point. A woman, 55 years of age, lately resided in Cornwall, who had borne several children and always enjoyed good health, but had never

menstruated or had any vicarious discharge. (Montgomery, Op. cit., p. 29.) Rondelet mentions a woman who was delivered twelve times; and Joubert another, who bore eighteen children, neither of whom had ever menstruated. (Gardien. *Traité des Accouchemens, tom.* i., p. 220.) M. Vandersavel communicated to the Medical Society of Verviers a case of pregnancy without menstruation in a patient who had attained her twentieth year. M. Rutten took occasion to state, that he had seen three analogous cases: the first had a family of fourteen children without ever having discharged anything like the catamenia at any period; the second was thirty-two years old; and the third became pregnant, but aborted. In none of these was there any vicarious hemorrhage or discharge; but what is remarkable, all were constantly tormented with an insatiable thirst. (Am. Journ. of the Med. Sciences, for April, 1844, p. 496, from *Archives de la Médecine Belge, Aug.*, 1843.)

On the other hand, there are a number of equally well-authenticated instances of impregnation taking place after the final and absolute cessation of the menses. I have already noticed several examples of this kind, when speaking of child-bearing in advanced life. The following is a remarkable American case: A woman at Whitehall (State of New York), named Ann Cook, had a child at the age of sixty-four. She had not menstruated for fifteen years, and her youngest child was twenty-six years old. The child was born in February, 1836, and was doing well. (Beck's Med. Jurisprudence, 6th ed., Phil., 1838, vol. i., p. 208, (note) from the Boston Med. and Surg. Journ., vol. xiv., p. 79) At a recent meeting of the "Societé Médicale du Temple," M. Legros narrated the case of a married woman, the mother of several children, who ceased to menstruate at the age of forty-one. Two years afterwards she became pregnant, and in process of time was delivered of a full-grown child. She then confessed, that on thinking herself safe, she had abandoned herself to a young man. M. Legros suggests that the excitement which attended this new *liaison* may have revived the functional vitality of the uterus. (London Lancet, for Oct. 28th, 1843, Am. ed., vol. i., p. 108, 1843–4, from the *Gaz. de l'Hôp.*, Oct.)

The true state of the question seems to me to be comprehended in the following considerations:—As I have already remarked, the only essential condition of fecundity is, that the ovaries should be capable of maturing and eliminating healthy ova. It is true, that in the human female, this capability of maturation and elimination, is generally manifested by a periodical discharge from the internal surface of the uterus; but it is not physiologically impossible, or even improbable, that healthy ova may be formed without the usual catamenial accompaniment. Menstruation is ordinarily "an epiphenomenon;" but it does not seem probable that it is indissolubly connected with the appropriate function of the ovaries. This view is in harmony with the best-established facts in comparative physiology. From the researches of Purkinje, Von Baer, Coste, Carus, M. Barry, Jones, Krause, R. Wagner, Bischoff, Bernhardt, and Valentin, it appears that the germ in the human female,—as in the females of the lower animals,—consists in the presence of an ovum similar to what is found in the bird. And the observations of MM. Duvernay, Raciborski, Bischoff, and Pouchet, have shown that in all animals the ova are discharged at determinate epochs,—without the intervention or co-operation of the male,—which have a manifest relation with the periodic excitement of the genital organs. Hence, it

appears, that the menstruation of women, in so far as the periodical maturation and discharge of ova is concerned, is analogous to the heat or rut of mammiferous animals. The sphere of the law which regulates the generation of animals, has thus been greatly enlarged, establishing a closer analogy than was supposed to exist between the discharge of the ova of mammalia, and those of fishes, batrachian reptiles, and others, in which the ova are discharged from the body, and impregnated externally to it. MM. Rengger, Meckel, Cableis, and Numan, observed in the sheep, swine, cow, buffalo, and mare, a mucous or sero-sanguinolent discharge from the generative organs, coincident with recurrence of the period of heat in the animal. And MM. Geoffroy St. Hilaire, Fr. Cuvier, and Ehrenberg, distinctly maintain that certain species of the quadrumana are subject to a periodic discharge of sanguineous fluid corresponding with the epochs of the heat, the periods of which usually return every twentieth or thirtieth day. Blumenbach, J. Müller, and others, regard the bloody discharges of animals during the period of sexual heat, as totally different from menstruation in the human female, since the latter,—they affirm,—has no connection with the sexual excitement. Whether the analogy be in all respects complete or not, it is very evident that in every animal the phenomenon in question is connected with the reproduction of the species; and it is quite certain that in women there is a greater aptitude for conception immediately before and after menstruation, than there is at any intermediate period. It is clear from the foregoing considerations that the expulsion of unimpregnated ova at determinate epochs, is common to the whole zoological series, and has a necessary connection with the process of fecundation; whereas, the phenomenon of a periodical flux from the generative organs is peculiar to a few species of mammiferous animals. The former is, therefore, an universal, essential, and necessary condition of a generative capacity in the animal kingdom, while the latter is only an occasional accompaniment in some of the higher mammalia.*

Under any view of the question, it seems to be evident, that many animals manifest a capability of reproduction, without the phenomenon of a discharge analogous to the catamenia; and it moreover appears to be established beyond a rational doubt, that in women, impregnation has occasionally taken place without the previous or subsequent appearance of the menses. We have, therefore, positive and incontrovertible facts to sustain us in the opinion, that, in the human female, fecundation is possible, either without the supervention of menstruation, or after its final and absolute cessation, according to the ordinary arrangement of nature; while the analogical evidence afforded by comparative physiology, is

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* For the latest researches on the comparative physiology of reproduction in animals, see W. B. Carpenter's Principles of Gen. et Compt. Phys., 2d Ed, Lond., 1841, p. 456 to 501, par. 602 to 665; and Prof. Richard Owen's Lectures on the Comp. Anat. and Phys of the Invertebrate Animals, London, 1843, p. 23, et *passim.* On the physiology of Menstruation, and its connection with the discharge of unimpregnated ova in the human female, see also J. Müller's Elements of Phys., Am. Ed., by J. Bell, Phil., 1843, p 821 to 829; W. B. Carpenter's Principles of Human Phys., Am. Ed., Phil., 1843, p. 572, par. 742. Also, Mr. Raciborski in Medico. Chir. Rev. for Oct., 1843, p. 510-12; M. Pouchet in *Idem*, for Jan., 1844, p. 223-226; M. Remak in *Idem*, for April, 1844, p. 484-486; and Dr. Paget's Report in the Am. Journ. of the Med. Sciences, for April, 1844, p. 436-438. See also, the New York Journal of Med. and the Collateral Sciences, vol. 2, p. 416, 417, May, 1844; and Medico Chir. Rev., for July, 1844, p. 253-256.

sufficient to lead us towards a rational explanation of these singular aberrations in human embryology. As to the age to which a woman may retain her procreative powers—perhaps the assertion of Lord Erskine, in his speech on the celebrated Banbury Peerage case, that "there is no statute of limitations on the powers and faculties of man,"—which he applied to the male—may, with the same degree of propriety, be made applicable to the female.

The limits of the generative faculty in women are not invariably those of the function of menstruation. For, not only is it observed to continue beyond the period of menstrual cessation, but conversely, the catamenial flux has been known to recur with perfect regularity long after the powers of fecundity have become dormant. At least, it has been known to continue twenty or thirty years later in life than any recorded instance of child-bearing; from which it may be inferred that the activity of this function is not always accompanied with a correspondent capability in the ovaria to eliminate healthy ova. This is another proof that the two phenomena are not absolutely inseparable. I am aware that Dr. Locock and others have suggested that such instances are not cases of genuine menstruation, but sanguineous discharges arising from uterine disease; but the evidence against such conjecture is too strong and palpable, the observers too accurate and trust-worthy, to admit of a reasonable doubt concerning the true character of the phenomenon in question. The records of obstetrics furnish many well-attested cases of protracted menstruation. It has been known to have been protracted until the age of 54, 55, 65 (Dewees); 61 (La Motte); 55, 60, 65 (Ryan); 69 (Parry); 70 (Richerand, Magendie); 60 to 75 (Desormeux); 80, 95 (Lond. Med. and Surg. Journal, 1831, vol. 5, p. 238); 71, 80, 90 (Good's System of Nosology, Boston edition, p. 297); and 100, 106 (Haller, Blancardi). M. Gardien relates a case in which menstruation continued regular and healthy up to the age of 75 (op. cit., tom. 1, p. 366). Of 77 cases noted by M. Roberton and Mr. Harrison, at Manchester, in 17, menstruation continued beyond the age of 50, of which 2 went to 60, and 1 to 70. (Edin. Med. and Surg. Jour., vol. 38, p. 254). Mr. Semple has collected several instances of menstruation between 70 and 87 years of age. (Lond. Med. Gaz., vol. 15, p. 463). An extraordinary case occurring in Italy, is recorded, where the function continued from the 53d to the 94th year, without injury to health. (Beck, op. cit., vol. 1, p. 209 (note), from Am. Jour. Med. Sciences, old series, vol. 7, p. 514.) M. Brierre de Boismoni, in his Prize Essay on Menstruation, gives the history of an old maiden lady, who died at the age of 72, up to which time the catamenia had continued to return (very irregularly indeed) from her 24th year, when they made their first appearance. (Medico-Chir. Rev. for Jan., 1843, p. 239.) Dr. Strassberger, of Beeskow, has given the case of a lady who ceased to menstruate in her 42d year, and with the exception of some attacks of gout, remained in good health until her 80th year. At that time—in 1832—menstruation recurred, with abdominal pain, continuing as before for four days, and it returned regularly until August, 1835, during a period of nearly three years. From that time it disappeared again until the time of her death. According to her account the fluid had the usual color and smell. (Medicinische Zeitung, No. 48, S, 248, Nov. 30, 1836, as cited in the Am. Med. Intelligencer, vol. 1, p. 374, Phil. 1838.) Dr. Peterson relates the case of a healthy woman, aged 79, who was seized on the 26th of March with uterine pains; these

lasting a few days, were terminated by a hemorrhagic discharge. On the 23d of April she was again affected in the same way, the discharge appearing on the 25th, and continuing four days. Since that period (twelve months after) she has regularly menstruated. (Brit. and For. Med. Rev., Oct., 1840, p. 560, from Bibliothek for Læger, Feb., 1840.) The translator adds that a most extraordinary case is given by Velasquez, of Tarentum, of the Abbess of Monvicaro, who, at the age of 100, after a severe illness, had a recurrence of the catamenia; and not only this, a new set of teeth and a fresh head of hair appeared! (Ibid, p. 560.) But perhaps the most astonishing case connected with this subject, is related by Holdefreund, where the constitutional tardiness of the genital system was so great that the catamenial flux appeared for the first time at the age of 70 years! (Erzäklungen, No. 4, as cited in Good's Study of Medicine, Doane's ed., New York, 1836, vol. 2, p. 434.) Some of the last cases above detailed are, doubtless, curious examples of the sudden and very extraordinary renovation of powers which the system occasionally exhibits, when life is prolonged to the period which was denominated the grand climacteric epoch by the ancient Greek physiologists.

I have thus taken a hasty glance at the anomalous phenomena occasionally presented in the procreative powers of the human female, viewed in connection with the function of menstruation; in the hope that some ray of light might be thrown upon the physiological question suggested by the case which is under consideration. The legitimate and strict logical induction which flows from a careful review of analogous cases, is, that the continuance or re-appearance of the catamenia in advanced life, *does not necessarily imply an absolute capability of fecundation*, although it may, *cæteris paribus*, augment the probabilities of impregnation supervening in any given instance. On the other hand, its non-appearance or permanent cessation, does not always indicate the impossibility of the supervention of pregnancy,—although it may, *cæteris paribus*, diminish the chances of such an occurrence. This point cannot, therefore, be absolutely and rigorously determined by any process of *à priori* reasoning. Menstruation is an usual and valuable,—but not an invariable—monthly index of the generative capacity in the human female. Under any circumstances,—in very old women,—the probabilities are, in general, immensely against the affirmative side of the question. In the individual example under consideration, this disparity of chances may be somewhat equalised, by the additional evidence in favor of fecundity, afforded in the phenomenon of the mammæ participating in the catenation of sympathies. During the researches into which I have been led, while investigating this subject (which, however, a variety of causes has rendered comparatively limited), I have not been able to find a single case, where the restoration of the menstrual flux in the aged, was produced by the instrumentality of a stroke of lightning, or any analogous shock impressed upon the animal economy. It is physically possible, that the reception of the electrical shock, and the renewal of the function, might have been mere sequent phenomena, having no connection as cause and effect; but the powerful impression produced on the same function by the operation of the same agent, in the other case, seems to overthrow this otherwise improbable conjecture.

The remarkably striking effects produced on the nervous system as well as the uterine functions, in both of the surviving cases, by the influence of electricity, serve to revive and strengthen the suspicion that

this powerful agent has been greatly neglected in its applications to medicine; having, in a majority of instances, been unscientifically and inefficiently applied. Very recently, the spirit of philosophical induction which Dr. Golding Bird and others have rekindled on this subject, has, in a measure, served to elevate electricity to its proper position as a remedial agent.

Although the principle of electricity or galvanism was unknown to the philosophy of the ancient Greek and Roman physicians, yet it was virtually applied by them in the treatment of disease, in the shape of that living voltaic battery—*the marine Torpedo** (*T. diversicolor, and T. oculata of J. Davy.*) Scribonius Largus, a Roman physician and inferior Latin writer, of the age of the Emperor Claudius (A. D. 41), recommends the application of torpedoes, both in headache and in gout. He says:—"A headache, however inveterate and intolerable, is immediately removed, and permanently cured, by placing a live black torpedo on the painful part till the pain cease and the part become benumbed." ("Compositiones Medicæ," c. 1. Apud Medicæ Artis principes, 1567. As translated and cited in the London Lancet for July 29th, 1843. Am. Ed. 1842–3, vol. 2, p. 566, 567.) He continues:—"In both species of gout (the hot and the cold, to wit) a live black torpedo should be placed under the feet, the patient standing not on a dry shore, but on one washed by the sea, till the whole foot and leg is benumbed up to the knees. This both removes the pain at the time, and prevents its future return." (Op. cit., c. 41, cited and translated *ut supra*, vol. 2, p. 567.) Claudius Galen (A. D. 131—200), the brilliant Grecian genius, and physician to the Emperor Marcus Aurelius, observes that:—"Some persons think that certain bodies can affect others in their vicinity by contact only, in consequence of the mere force of their virtue, and that this is plainly shown in the case of the marine torpedo, the power of which is so great that when it is transmitted to the hand of the fisherman through his spear, it suddenly renders the whole hand torpid. From these conjectures it is easily understood that certain things of small bulk induce, by contact alone, the greatest alterations, as may be seen, also, in the Heraclean stone, which is called the magnet; for iron which it has touched adheres to it without any fastening; then if another piece of iron touch that which was first touched, it will adhere to it as the first did to the magnet; a third piece of iron will, in like manner, adhere to the second, so as to make it evident that the most intense powers reside in certain substances." (Galen—"De Locis Affectis," lib. 6, c. 5. Edit. Basil, Græce, 1538. Translated and cited *ut supra*, p. 566.) This is certainly a remarkable passage; and the translator justly remarks that—"We have here three things worthy of notice: first, a recognition of the power that has since been known as animal electricity; secondly, a knowledge of the fact that this power is capable of transmission through a conducting medium; and, thirdly, a conjecture of its affinity to the magnetic power." "Is not a germ of electro-magnetism also to be found in the

* Accurate descriptions of the properties of the Torpedo are to be found in the writings of the ancient physicians and naturalists, viz—in Hippocrates (B. C. 460—360 ?); in Aristotle (B. C. 384—322); in Dioscorides (A. D. 54 ?); in Pliny (A. D. 23—79); in Appian (A. D. 100); and others. Aristotle says that this fish produces torpor in other fishes, and is thereby enabled to seize and devour them. Pliny says that when touched by a rod or spear, even at a distance, it paralyses the strongest muscles.

same passage?" In another place the same author informs us, that he found the dead torpedo ineffectual in curing headache and causing the return of prolapsed anus; but that he found the application of the live fish perfectly effectual in removing headache. (Galen—"De Simpl. Medic. Facult.," lib. XI. Ed. cit., tom. 2, p. 150, as cited *supra*, p. 566.) Aëtius of Amida (A. D. 550), writes to the same effect:—"The torpedo, applied alive, cures chronic headache, and causes the prolapsed anus to return." ("Lib. Medicinal," lib. 2, c. 185. Ed. Ald., translated and cited *ut supra*, vol. 2, p. 566.) Lastly, Baron A. de Humboldt assures us, that these electrical cures are found among the savages inhabiting the vast solitudes of the equinoctial regions of America, as well as among the Greeks and Romans. "In Dutch Guiana," he says, "at Demarara for instance, electrical eels" (Gymnotus electricus) "were formerly employed to cure the paralytic. At the time when the physicians of Europe had great confidence in the effects of electricity, a surgeon of Essequibo, M. Van der Lott, published a treatise on the medical properties of the gymnoti." He further says:—"I did not hear of this species of remedy in the Spanish colonies which I visited; but I can assert, that, after having made experiments during four hours successively with gymnoti, M. Bonpland and myself felt till the next day a debility in the muscles, a pain in the joints, and a general uneasiness, which was the effect of a strong irritation of the nervous system." (Alex. de Humboldt's Personal Narrative of Travels to the Equinoctial Regions of the New Continent. Translated from the French by Helen Maria Williams. Vol. 4, Book 6, Chap. 17, pp. 356, 357. London. 1819.)*

Since the period (1744) when M. Kratzenstein of St. Petersburgh for the first time attempted to make electricity of some service in the cure of several diseases, its reputation as a remedial agent has been as dubious and fluctuating, as the results of different experimenters have been vague and contradictory. The indefatigable electrician and philosopher, Tiberius Cavallo, has enumerated 24 distinct affections, in which the judicious employment of electricity has been found authentically useful. (Vide, Complete Treatise on Electricity. 4th Ed. in 3 vols. Vol. 2, p. 144 to 161 et seq. London. 1795.) Later investigations have pointed out to philosophers, that this agent is neither that grand catholicon which cures all diseases—so eloquently advocated by some of the earlier enthusiasts—nor so inefficient and useless an application as many enlightened physicians have asserted. It must be confessed, however, that physicians have not, heretofore, conducted the inquiry in that spirit of careful and rigid induction, which might lead us to those general laws and extensive generalizations, so essential to a rational application of such a subtle and energetic agent.

It is refreshing to perceive that a better and more philosophical spirit

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* The same acute philosopher propounds this question:—"Did an ingenious and lively people, the Arabians, guess from remote antiquity, that the same force which inflames the vault of heaven in storms, is the living and invisible weapon of inhabitants of the water? It is asserted, that the electrical fish of the Nile" (Malapterurus electricus) "bears a name in Egypt that signifies *thunder*." (Humboldt. Op. cit., vol 4, p. 377, from *Annal. du Mus.*, vol. 1, p. 398.) However, this philological evidence seems to be greatly weakened by the circumstance that a "distinction is to be made between *rahd*, thunder, and *rahadd*, the electrical fish; and that this latter word means simply *what causes trembling*." (Silv. de Sacy, in *Abd-Allatif*, p. 167, as cited by Humboldt, Ibid., p. 377. Note.)

is beginning to germinate among men of acknowledged attainments in science. Indeed, it is impossible to persuade ourselves, that an agent which so powerfully affects the nervous system, as well as the coagulability and other properties of the blood, would not admit of very important applications in the treatment of disease. The acknowledged influence of electricity as displayed in promoting the passage of fluids through capillary tubes, has suggested to Mr. Martyn Roberts of London, the beautiful analogy that it is the neuro-electric power in the animal economy which overcomes the resistance offered to the blood in its progress through the tortuosities of the minute ramifications of the vascular system, and that it thus assists in circulation. This conjecture is sustained by several striking illustrative electrical experiments, followed by an ingenious explanation of the phenomena of inflammation and blushing. (Vide, Lond. and Edin. Phil. Mag. 3d series. Vol. 19, p. 41, et seq. 1843.) Although this beautiful hypothesis may involve various fallacies in its applications, yet, the well-established property of electricity in promoting the circulation of fluids through capillary tubes, suggests the probability of its acting analogously on the fluids in the animal system, and being thereby efficacious in forwarding the passage of the blood through the vascular capillaries, and increasing the quantity of sensible perspiration.

There can be no doubt that electricity is very materially concerned in the economy both of animal and vegetable life; but in the absence of all certain knowledge as to the mode in which it is excited and brought into play in living bodies, the chasm can, for the present, be supplied only by remote conjecture. The experiments of De Candolle, Duhamel, Weekes, and others, have established its influence on the germination of seeds and the growth of plants; while the energy of its action in an accumulated form, shows that it holds an important rank among the ultimate causes of natural phenomena. Almost all chemical changes are attended with some alteration in the electric state of the bodies concerned; and when we consider the number and variety of these changes in the living animal body, it is not surprising that disturbances of its *electric equilibrium* should be continually occurring. But these are usually so slight, that they can be detected only by refined means of observation; and it is only in those rare instances when they become considerable that they attract notice. These electrical phenomena have been carefully studied in vegetables. If a wire be placed in apposition with the bark of a growing plant, and another be passed into the pith, contrary electrical states are indicated, when they are applied to an electrometer. If platinum wires be passed into the two extremities of a fruit, they also will be found to present opposite conditions. In some fruits, as the apple or pear, the stalk is negative, the eye positive; whilst in such as the peach or apricot, a contrary state exists. If a prune be divided equatorially, and the juice be squeezed from its two halves into separate vessels, its portions will, in like manner, indicate opposite electrical states, although no difference can be perceived in their chemical qualities (Vide, W. B. Carpenter's Principles of General and Comparative Physiology, 2d ed., Lond., 1841; p. 433, part 572, from Annales de Chimie, tom. 57). Electricity possesses the remarkable power, when transmitted along the several nerves of special sense, of exciting those peculiar changes in the brain, by which the different sensations are produced; and thus, by proper management, this single agent may be made to produce flashes of

light, distinct sounds, a phosphoric odor, a peculiar taste, and a prickling feeling, in the same individual at one time (Vide, W. B. Carpenter's Animal Physiology. Popular Cyc. of Natural Science; London, 1843, pp. 371 et 437, par. 408 et 587). Thus, it clearly appears that, in their effects, as well as in their mode of action, there is a more obvious analogy between electricity and nervous agency, than there is between any other two powers of animated and inanimated nature: the most palpable difference consisting in the fact, that the conducting power of a nerve is destroyed by a ligature, whilst it is still capable of transmitting a current of electricity or galvanism. According to Bellingeri and Rossi, the blood presents modifications of its electrical states, in the severe forms of inflammatory fever. It is not improbable that the evident effect of light upon the blood, in rendering it both more abundant and rich, may be attributed to the electrical states of the solar rays (Vide, Copeland's Dic. of Prac. Med., vol. i., part 1., Art. Blood, p. 183, par. 90).

The most disastrous effects are frequently produced by the transmission of accumulated atmospheric electricity through the bodies of men and animals; and numerous instances are upon record. It is not, perhaps, uncommon for lightning to produce a decided medical effect in those instances where its intensity or quantity is not sufficient to destroy life. This may be either injurious or beneficial, according to circumstances. Instances have been known where paralysis, deafness, dumbness, indistinctness of vision, or total blindness, and permanent loss of memory, have resulted from strokes of lightning. On the contrary, a few rare examples are to be found, where a permanently beneficial effect has been produced on invalids, after recovering from the violence of the shock. Professor D. Olmsted has reported a remarkable case of recovery from a paralytic affection by a violent stroke of lightning. It appears that Mr. Samuel Leffers, of Carteret County, in North Carolina, had been seized with a paralytic affection, which fixed itself on the face, and principally on the eyes; causing them to remain uncovered day and night, from which exposure he had nearly lost his sight. As he was walking in his chamber during a thunder-storm, a flash of lightning struck him down senseless; he recovered his consciousness at the end of twenty minutes, but did not regain perfectly the use of his legs for the rest of the day and night. The next day he found himself so far recovered that he sat down to give a distant friend an account of what had happened. He was agreeably surprised to find himself able to write a long letter without the aid of glasses. The paralysis came on in the summer of 1806, when he was about seventy years of age; and the accident occurred on the 10th of August following. Since that period (after the lapse of fourteen years), the paralysis has never returned; from which he concluded that it was effectually cured by the shock. The same cause which restored his sight, on the other hand, impaired the delicacy of his hearing; since a deafness commenced at the same time, which continued to the time of writing this account to Professor Olmsted, when he had attained the age of eighty-four years. (Am. Journal of Science and Arts, vol. 3, p. 100—103; 1821.) Tulpius relates the case of a young man, who, after a dumbness of three years duration, arising from the ablation of one-half of the tongue, felt a great movement of the muscles of that organ at the moment in which he saw a brilliant flash of lightning, followed by a violent clap of thunder,—"*et recouvra immediatement la parole.*" (*Observations médicales*, lib. 1, obs. 41, as cited in the *Dictionnaire de Médecine*,

ou Répertoire Général des Sciences Médicales, 2d ed., Paris, 1835, vol. xi. Art. *Electricité*, p. 218.) Dr. Tilesius, of Mulhauzen, has given an interesting account of the effects of lightning on four persons who were struck down while passing along a narrow road, embedded in a forest. The most singular circumstance, in a physiological point of view, is, that the elder of the two brothers who survived, was quite deaf at the time of the accident; but the electricity, in passing through his body, scratched the inner part of the right ear, near the tragus and antihelix, and on the following day he recovered his hearing. Both of them, on becoming sensible, were seized with violent nausea and vomiting, after taking a few cups of tea; and during the succeeding twelve months, they experienced an extraordinary degree of drowsiness and depression. (Medico-Chir. Rev. for Jan., 1825, pp. 149, 150, from *Gazette de Santé*, taken from Schweigger's Journal, vol. xix., No. 2. Also, Quarterly Journal of Science, etc., for Oct., 1824, vol. xviii., pp. 190, 191, from *Bib. Univ.* 25. 318.) Taking the above-mentioned cases, in connection with the one which I have detailed on a preceding page, we are furnished with four well-marked examples of salutary effects resulting from severe shocks of lightning.*

In contemplating the foregoing phenomena, we are able to catch a faint glimmering of a beneficent purpose even in the terrific manifestations of this apparently destructive agent. We are so constituted, however, that these *crises* in the natural world impress almost every one with a feeling of inexpressible awe. The deep lowering gloom of the thunder-cloud, the overwhelming burst of the electrical explosion, the dazzling flash from which the steadiest eye shrinks, and the irresistible energy of the lightning which no earthly substance can withstand, speak only of something terrible and fearful, even independently of any personal danger which association may whisper. The present state of physical science does not enable us to perceive clearly and steadfastly those adaptations of the laws of atmospheric electricity to its uses in the economy of nature; to see in these formidable symptoms the means or the consequences of general good. Such a wise and beneficent adaptation most undoubtedly does exist; a clear and abiding perception of it, under the most general forms, must be developed by the intellectual labors of future generations.

The collateral facts which I am now about to mention, and the observations they have suggested, relate more immediately to the *purely electrical* phenomena which were exhibited, and I trust they may be

* Since writing the above, my friend Edward P. Harnden, Esq, of this city, has kindly furnished me with the details of the case of a negro woman, who was struck down senseless by lightning during a thunder-storm in August, 1842, on the plantation of Mr. John S. Maxwell, of Bryan County, Georgia. For years anterior to the reception of the shock her health had been very bad, a progressive emaciation and feebleness, accompanied with pains in the lower portion of the abdomen, having undermined the powers of the system, and induced a condition approaching to chlorosis. The difficulty was evidently *sexual*, and probably arose from the protracted amenorrhœa which followed a painful delivery complicated by retention of the placenta. In the course of a week she recovered from the effects of the lightning, *since which period (two years ago) she has been a remarkably healthy and athletic laborer!* A *complete* history of this case was unattainable, but there can be no question concerning the *beneficial* effects resulting from the electrical shock, as indicated in the permanent restoration of health. It therefore constitutes the *fifth* instance of this kind.

appropriately embraced under the *collateral* clause in the title of this journal.

Mr. Wm. Jones, an intelligent farmer, of Liberty County, Georgia, and an accurate observer of nature, informed me that he witnessed the phenomena attending this fearful and resplendent exhibition of lightning from his piazza, a situation about one mile and a half somewhat southwest from the theatre of its fatal explosion. About 2 o'clock, P. M., on that day (2d of July, 1843), his attention was drawn to a singular-looking thunder-cloud in the southeastern portion of the horizon. It extended up towards the zenith in an irregular pyramidal form to an elevation of about seventy-five or eighty degrees, the superior portion being surmounted by protuberances of ragged cumuli, resembling large heaps of cotton under the strong illumination of the sun. The base presented the dark greyish hue so characteristic of clouds highly charged with electricity. The sky was, of course, but partially obscured, permitting the sun to shine out brilliantly at the observer's station. Vivid flashes of lightning occasionally furrowed the thick cloud near the verge of the horizon, which, after a considerable time, were followed by those low and prolonged reverberations of distant thunder so familiar to the inhabitants of this latitude. At 3 o'clock, P. M., our informant was astonished at the sudden appearance of five or six electrical flashes of painful brilliancy, succeeding each other so rapidly that the eye could scarcely distinguish the intervals,—apparently proceeding from the earth in a northeast direction to the apex of the cloud, or *vice versâ*,—followed in a few seconds by a single but awful crash of thunder, indicating the comparative proximity of the strokes. The equilibrium between the earth and the cloud seems to have been completely restored at this instant, for no further manifestation of lightning or thunder was observed in the hemisphere; the cloud soon dissipated without precipitating rain, and, in a short time, the atmosphere resumed the most perfect tranquillity. Such were the phenomena presented to the distant, calm, and dispassionate observer; and it will be seen, that they accord in a striking manner with the account gleaned from those who witnessed the fatal catastrophe, as detailed in the beginning of this paper. Having already noticed only a *part* of the effects resulting from this electrical explosion, as manifested on the five negroes who were struck down. I now proceed to examine the circumstances connected with the damage sustained by lightning at two points quite remote from the first scene of action, and which, as near as can be ascertained, must have been occasioned by *simultaneous* strokes.

A cotton-house, situated *one mile* south of the spot where the persons were killed, was struck apparently at the same instant, ignited and burnt down; and an ox, while grazing in an open pasture, distant, in a direct line from the same point *three miles*, and in a direction north 30 degrees west of the magnetic meridian, was struck dead!! At the position where the animal was killed, the sun was shining brightly,* *no rain fell*

* The circumstance of thunder and lightning from a cloudless sky is often mentioned by the ancients, and was considered by them as the highest omen. Herodotus (B. C. 484-440) informs us that when the horse of young Darius, son of Hystaspes, was led out, it instantly began to neigh, which, though the sky was remarkably clear, was succeeded by thunder and lightning. This being considered a favorable prodigy, he was immediately proclaimed king (Herodot., Book 3, c. 86). Horace (B. C. 65-8) having observed thunder and lightning in a cloudless sky, composed an ode on

either before or after the stroke, and the earth exhibited *no marks* of mechanical violence. The absence of rain is certainly a remarkable phenomenon, and the complete authentication and establishment of the facts in this instance have enabled me to furnish an affirmative answer to the following interrogatory propounded by the President and Council of the Royal Society in their elaborate instructions for the late scientific expedition to the Antarctic Regions under Capt. James C. Ross, viz. :— "Does lightning ever happen without rain *in the immediate point where it originates*, or at least without a rapid formation and increase of cloud at that point?" (Vide London and Edin. Phil. Mag., 3d Series, vol. 15, p. 196, 1839.) It has already been observed, that the ground where the negroes were killed presented no appreciable indications of the disruptive effects usually attending strokes of lightning; and, upon close inspection, no trace of injury could be detected on the mulberry tree, although about a dozen stalks of Indian corn on the north side of it were blasted. Indeed, the tree does not appear to have sustained the slightest injury; for, in June last, nearly twelve months after the accident, *it was loaded with fruit*. No scheme of persuasion can induce the negroes to touch this luxuriant crop of berries; an inveterate superstitious awe protects it as effectually as though the tree was under the special guardianship of the powers of misfortune!

Several circumstances attending these electrical phenomena are worthy of consideration.

1st. The fact of the lightning having *struck several points so distant from the mass of the cloud*, and the apparent theatre of its former operations.

2nd. Having taken place *anterior to the fall of rain at any point; and without producing even a drop at the most remote station.*

3rd. The extremely *large area of its operations*, extending along a chain of posts, nearly coinciding with the meridian, for a distance of *four miles.*

4th. The *immense length of the strokes;* especially when it is considered that the transilience was accomplished through strata of air which must have been *comparatively dry.*

5th. The comparatively *slight mechanical effects produced on the surface of the earth;* at least, at the two positions most remote from the base of the cloud.

Taking all the phenomena into consideration, I am disposed to think—if permitted to hazard an opinion in regard to such a complex matter—that the following explanation will reconcile all the facts. Let us suppose that the two extremities of this elongated cloud, highly charged with electricity, hung down towards the earth; they would put a considerable area of the earth's surface vertically under each end, in the opposite electrical state by induction; and if a discharge or succession of discharges should suddenly take place from the remote extremity of the cloud, the equilibrium would be instantly restored by a flash or series of flashes ascending from that point of the earth which is under the proximate end. Or we may suppose that there were two clouds differently electrified, the distance from each other being too great to permit the discharge through

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it, as a circumstance which staggered his Epicurean notions, and impressed him with awe and veneration (Lib. 1, Ode 34). On the contrary, Lucretius (B. C. 96-52) positively states that thunder in a serene and cloudless sky is a physical impossibility (*De Rerum Naturâ*, Lib. 6, 245 et seq.)

the intervening air, the lightning might, as suggested by the famous Italian philosopher, Sig. Beccaria, take a circuitous route, first darting to the earth, and thence to the opposite cloud, the earth acting the part of a conductor by which the neutralization is effected. The former supposition, however, seems most in accordance with the observed appearance of the clouds, as they did not appear to present any distinct intervals of separation. As the surface of the earth which would, under such circumstances, be subjected to the inductive action, might be quite extensive, it may readily be imagined that several strokes might ascend simultaneously from different portions of the area. Such a phenomenon would be more liable to occur, when, as in the example before us, the earth was excessively dry: as such a condition of things would interfere with that rapid convergence and concentration of electricity from all parts, which must attend the restoration of equilibrium by a single stroke. The points from which the lightning would ascend, might very probably be determined more by the relative conductibility of the inferior strata, than the elevation of protuberances on the surface of the earth. The extensive researches and experiments in atmospheric electricity of Mr. Luke Howard, of London; Mr. Andrew Crosse, of Broomfield; and others, have shown that a thunder-cloud is composed of concentric zones of electrified vapor, diminishing in intensity in the ratio of the square of the distance, from the centre towards the circumferential area of the cloud. If the *central area* is positive, the first zone is negative, the second positive, and then follow other zones in pairs. Directly below this cloud, according to the laws of induction, there must exist, on the surface of the earth, a counter charge, or *nucleus*, of opposite or negative electricity, with its co-ordinate zone of positive, and with other zones of electrified surface, corresponding in number to those of the cloud above, although each is oppositely charged. (Vide, Drs. Hodgkin and Fisher's translation of W. F. Edwards "On Physical Agents," Appendix; also, H. M. Noad's "Lectures on Electricity," &c., new edition, Lond., 1844, p. 92-95.) Such an arrangement seems to afford an explanation of the circumstance, that a shock is sometimes felt at two points, whilst none is experienced at an intervening station; the latter being situated at a neutral or non-electric point in the system of concentric zones.

As there was but a single violent detonation heard, the discharges must have been nearly simultaneous; and that there was more than one stroke, is manifest, both from the effects produced at remote stations, and from the observation of Mr. Jones. The velocity of the electric fluid (if it be a fluid) is so great, that it is impossible to ascertain from observations on the flash, whether the lightning ascends from the earth to the cloud, or descends from the cloud to the earth. Professor C. Wheatstone, of London, having, with remarkable sagacity, availed himself of a happy combination of principles drawn from three separate branches of physical science, has been enabled to determine that it is transmitted at the rate of nearly two hundred and eighty-eight thousand miles per second—a velocity which greatly transcends that of light, and at which it would perform the tour of our planet twice in the time it requires to wink with our eyelids! There are, however, circumstances attending the discharge, from which, occasionally, the direction may be inferred. In the instance under consideration, I think the phenomena indicate that the discharge was upwards. In the direct downward stroke, the electrical energy is usually concentrated on a particular point, thereby acting with almost

inconceivable intensity; and even in those cases in which the stroke divides on approaching a terrestrial object, the theatre of its operations is limited to a circle of a few hundred feet in diameter; while its concentration is indicated by the obvious mechanical effects produced. In the example before us, the lightning appears to have ascended from a considerable area around each focus of destruction, in the form of conical brushes, which became concentrated into distinct streams soon after leaving the ground, and thus continued to the apex of the cloud. Hence the absence of any violent mechanical injury to the tree and the ground in the neighborhood; and hence also, the blasting of the corn, situated some distance from its base. The electricity was so diffused on leaving the earth, that it did not kill the tree, although human beings and more delicate plants were destroyed.

A person may be killed by lightning when the explosion takes place twenty miles off, by what Lord Mahon, afterwards Earl of Stanhope, called the returning stroke. When the electricity has been expelled from a portion of the earth—and, of course, from conducting bodies thereon—by the approach of a highly electrified cloud; if the latter is suddenly discharged by a stroke to a remote cloud or a distant terrestrial object, the electricity will return to that portion of the earth with such impetuosity as to extinguish animal life by the violence of the shock. In such a case, the lightning and thunder must be remote, if at all sensible, because the electricity does not traverse the air at the spot where the returning shock is manifested. When the quantity of electricity is so great as to give rise to an upward stroke at the same time that the return takes place, it becomes converted into an example of the *first* arrangement I have previously supposed; and the nearly simultaneous occurrence of lightning and thunder is a necessary accompaniment. Signor Beccaria and Tiberius Cavallo assure us, that they have several times witnessed the phenomenon of lightning assuming "the form of a brush," and striking many objects at once. The latter remarks, that "this phenomenon may be imitated by presenting a conducting body to the negative conductor of an electrical machine." (T. Cavallo's Complete Treatise on Electricity, fourth ed., in three vols., vol. iii., p. 238, Lond., 1795.) Mr. O. H. Bryant, clerk in the State Prison, at Charlestown, Mass., has communicated the particulars of a stroke of lightning, which shocked several hundred persons on the 30th of July, 1829. The effects of this discharge were felt by three hundred individuals, and over a surface of 172,500 square feet, in nearly the same degree of intensity, without any permanent injury being sustained. (Am. Journal of Science and Arts, vol. xvii., pp. 193, 194, 1830.)

The dryness of the air, and the length of the strokes, were also remarkable phenomena in the instance under examination. Supposing the vertex of the cloud to have been a little *north* of the zenith at the station nearest the base of the same where the cotton-house was burnt (an assumption scarcely warranted by appearances), so that lines drawn from the latter to the most remote station where the ox was killed, and from the top of the cloud to the same point, would constitute the two equal sides of an isosceles triangle; then, the length of the stroke which caused the death of the animal must have been at least four miles! Or allowing three miles to be the mean distance of the lightning discharged in a track at right angles to Mr. Jones's line of vision, and extending through a vertical arc of 90° (assuming the summit of the cloud to have reached

the zenith of this observer, which was not the case), it would give a chord of 4.2426 miles as the distance travelled by the electricity at one discharge! M. Gay-Lussac, from observations in mountainous districts, where the thunder-cloud is seen below the spectator, has ascertained that the striking distance frequently exceeds three miles. (Quarterly Journal of Science, &c., for Oct., 1825, vol. xx., pp. 172, 173, Lond., 1826, from *Ann. de Chim.*, xxix., 105.) Mr. W. Sturgeon concluded, from rather loose observations made at Woolwich, during a thunder-storm, that he saw flashes nearly six miles in length. (Lond. and Edin. Phil. Mag., third series, vol. v., p. 421, 1834.) When rain is descending in torrents, it greatly facilitates the transmission through long striking distances. Moreover, the inferior density of the upper regions of the atmosphere, and the thin aqueous vapors which are floating there during the falling of rain, likewise tend very much to facilitate the transmission of electricity. Buildings, trees, and other tall objects are not usually struck by lightning before the supervention of rain, the dry dense air offering too great a resistance to be transpierced by the electric agent. In the present case, no such meteorological causes co-operated to assist in overcoming the restraining or coercive influence of the circumambient atmosphere.

Mr. Patrick Brydone, of Coldstream, Scotland, has recorded the particulars of a disastrous stroke of lightning, in the 77th volume of the Phil. Trans., which bear some points of analogy to the one under consideration, although in some respects quite dissimilar. On the 19th day of July, 1785, a cloud was observed to form in the southeast, accompanied with several flashes of lightning, followed by rolling thunder at a distance, which sound occupied from 25 to 30 seconds in traversing. Suddenly Mr. B. and his family were alarmed by a loud report resembling the firing of several muskets, for which they were not prepared by any preceding flash. The clouds immediately began to dissipate, and there was no further appearance of lightning or thunder. This explosion killed a man and two horses as they were ascending the hill soon after crossing the Tweed at a ford. A shepherd on the opposite bank of the river, and an eye-witness of the accident, corroborated Mr. Brydone's impression with regard to the absence of a flash; but asserted that he saw the dust rise at the place. The earth was excessively dry, and no rain fell either before or after the fatal explosion. The wheels of the cart bore marks of fusion, and behind each of them, was found a hole in the earth 20 inches in diameter, the centre of which was exactly in the tracks, and corresponding in situation to where the fused part of the iron must have been at the time of the shock. Mr. Brydone notices several other remarkable phenomena, probably of electrical origin, which were observed in the neighborhood on the same day, and only a short time previous to the fatal occurrence. About a quarter of an hour before the explosion took place, a shepherd in a vicinal field, saw a lamb drop down dead, and said that he felt at the same time as if fire had passed over his face. No thunder was heard, except at a great distance,—no lightning was seen,—the ground was not torn up,—nor was any dust observed to rise. A woman making hay near the banks of the river, suddenly fell down, and called out to her companions, that she had received a violent blow under the foot, and could not imagine from whence it came. Several other less obvious and striking circumstances are noticed in the account. (Vide Cavallo, op. cit., vol. 3, p. 207–219.) Shortly after Mr. Brydone's paper was read before the Royal Society,

Lord Stanhope presented a communication to the same body, in which he endeavored to explain the various phenomena detailed in the account, by means of what he called the electrical returning stroke. He supposes that there were two clouds, one above the other (the upper one being vastly larger than the one near the earth), charged with the same kind of electricity. Now let the remote end of the upper cloud suddenly discharge itself into the earth; the lower one must instantly discharge its electricity into the upper one, at a point directly over the assumed position of the man and horses:—the electricity which had been expelled by its influence from conducting bodies below it, must suddenly return into them, producing a violent shock, and even death. The flash between the two clouds occasioned the loud report, but was invisible, because a thick thunder-cloud interposed between the stroke and the observers. (Cavallo, op. cit., vol. 3, p. 223–232.) This explanation is certainly very ingenious, but is far from being satisfactory. A very natural objection grows out of the consideration, that the quantity of electricity which had been expelled from a man, two horses, and a cart, by the proximity of a cloud, should have produced such violent mechanical effects in returning. Life might be extinguished by a shock thus produced; but the disruptive effects indicate the passage of accumulated electricity. It is true that Lord Stanhope's hypothesis seems to be the only one reconcilable with the want of light; but the fact of the man's body being marked with a zigzag line as high up as the chin,—his hat being torn to pieces, and his hair adhering to fragments of it,—appears to throw some doubt on the accuracy of the observations with regard to the absence of a flash:—for the electricity could scarcely have accomplished all this, without passing from the crown of his head into the atmosphere above. The other less violent, but no less remarkable phenomena, noticed by Mr. Brydone, may, I think, be satisfactorily explained by means of Lord Stanhope's theory of the returning-stroke. The co-existence of lightning and thunder in the example detailed by me, constitutes the most manifest difference from the foregoing instances.

To recur once more to the circumstances attending the violent shock which prostrated and killed the several negroes. It will be recollected, that the two survivors were standing between the base of the tree where a child was killed, and an adult woman, who met the same fate. The question naturally arises, why were they not subjected to an equally destructive shock? Those who survived were actually nearer the tree than one who was instantly struck dead. That they were acted upon by a powerful shock, was evident from the injury sustained by their clothes. There can be no question that their security was owing to a comparatively insignificant circumstance, but one which beautifully illustrates the laws of electrical distribution. The under-clothes of the surviving women were saturated with perspiration, having just come out of a close room, where they had been attending religious services. The other three, who were killed, had been in the open air for a length of time, and were not in a like condition with respect to moisture. The recovery of the former was doubtless due to this circumstance; for the electricity was thereby conducted along the wet clothes and damp surface of the skin, which in the other instances traversed the interior of the bodies with destructive disorganization. This opinion is additionally fortified by the fact, that the clothes of those killed were not torn, neither did they exhibit any very obvious marks of external injury on their bodies.

In general terms, the liability of electricity to produce physical injury, is dependent on three variable elements; the energy of the electro-motive apparatus, the conductibility of the medium, and the irritability of the organs that receive the impressions. Hence, *cæteris paribus*,—the animal body being a tolerably good conductor,—security might be obtained either by perfect insulation or by an entire covering of a very good conductor.* In the one case the electricity would not approach the system; in the other it would confine itself to the covering. Thus, a church at the village of Châteauneuf, in the department of the lower Alps, in France, was struck by three successive strokes of lightning, on the 11th of July, 1819, during the installation of a new Rector. The company were nearly all thrown down, nine were killed, and eighty-two wounded. The priest who was celebrating mass, was not affected, on account, it is believed, of his silken dress acting as an insulator. (*Annales de chimie et de physique, tom.* 12.) On the contrary, Dr. Franklin found that he could destroy a dry rat by an electrical shock, when he could not hurt a wet one. (Letters to P. Collinson, 3d Lond. ed., pp. 36 and 47.) An interesting case is related by the Rev. Edward Hitchcock, where a man by the name of John Williams, of Conway, Mass., owed the preservation of his life to the circumstance of having had his garments slightly wet by exposure to rain, a few moments before he was struck senseless by a tremendous stroke of lightning. (Vide Am. Journal of Science and Arts, vol. 5, p. 121–125. 1822.)

There has been some diversity of opinion among physiologists as regards the cause of death by lightning.† In cases where no visible marks of injury are exhibited, Sig. Beccaria supposed that the electricity did not actually touch the body, but only produced a sudden *vacuum*

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* The ancients appear to have had some obscure idea of the protection which metallic conductors afford against lightning. Herodotus (B. C. 484–440) relates that the Getæ, the bravest of the Thracians, were in the habit of throwing their arms into the air whenever it thundered and lightened, as if menacing their god Zamolxis. (Herodot., Book 4, c. 94.) In looking over the writings of Ctesias, of Cnidus (B. C. 401), the Greek historian and physician to Artaxerxes Mnemon, the Rev. J. J. Conybeare thinks he has found a curious anticipation of the use of conductors for lightning. Ctesias relates that a certain variety of iron is found in India, which, when fixed into the ground (πηγνομενος εν τη γη), has the power of averting storms and lightnings (προπτηρας). (Annals of Philosophy. New Series, vol. 4, p. 439, 1822, from Ctesian in app. Herodot. Wesseling, p. 860.)

† The Rev. Mr. John Lyon, of Dover, has recorded the circumstances attending the death of a man and four horses by a single stroke of lightning, during a thunder-storm which took place on the 14th of August, 1795. No external appearance of injury was observed on the animals: *the penis of each gelding was extended, and the female had emitted a considerable secretion from the genital organs.* Upon examination, *the hearts of three of the horses were found to be ruptured obliquely across the right ventricle*, without injuring the septum. The right carotid artery of the other, or fourth horse, was also ruptured; but the heart was not injured. The body of the man was not examined. (Vide Med. and Chirurgical Rev., from May, 1796, to May, 1797, vol. 3, p. 413 et seq. London.)

Mr. Patrick Paterson relates the case of a recruit in the 29th regiment of Light Dragoons, who died from gangrene of the stomach and dysphagia, supposed to have been brought on by lightning. (Vide Med. Facts and Obs., vol. 8, p. 111 et seq., Lond., 1800.) It is very questionable, however, whether the difficulty in this case arose from the effects of electricity; for the patient seems to have been doubtful whether the shock proceeded from a flash of lightning which dazzled his sight, or from an accidental movement of the carriage in which he was travelling,—so feeble and transient was the sensation.

in the vicinity, and the air rushing violently out of the lungs to supply it, the breath is irrecoverably lost. He endeavored to sustain this weak position by asserting that the lungs in such cases were always found in a state of collapse; but this statement has been successfully controverted by the observations of Dr. Priestley and others. (Vide Hutton's Math. and Phil. Dic., Art. Lightning. Lond., 1796.) John Hunter thought that there was an instantaneous and total destruction of the vital principle in every part of the body; and hence the flaccidity of the muscles, the fluidity of the blood, and the rapid tendency to putrefaction. On the other hand, the experiments of Fontana and Brodie on animals, and the observations of Parkinson and Macauley on persons killed or injured by lightning, seem to go far towards demonstrating that the effects of electricity are expended chiefly in disturbing or destroying the functions of the brain. In cases of the destruction of life by violent electrical shocks, it appears probable, that there is a disturbance of the affinities between the component elements of the body, and the consequent immediate abolition of the vital properties of the tissues (especially of the nervous, which is most affected by this agent); and this may take place without any perceptible change of structure. In a thunder storm which took place in London in 1839, the vitality of a large portion of the eggs, which were undergoing artificial incubation in a machine for the purpose, was destroyed. On examination the yolk-bag was found to have burst in the more advanced; and the vessels of the vascular area were perceived to have been ruptured in those at an earlier stage. (Carpenter's Principles of Gen. and Comp. Phys., 2d ed., Lond., 1841, pp. 181–182, par. 226, note.) A writer in the American Farmer says, that he had two broods of goslings killed by a stroke of lightning which struck in a field, within less than half a mile of his dwelling; and that a nest of eggs was also destroyed at the same time. The same result is said to have been produced by the cannonading at the battle of Bunker Hill, on the goslings in a yard about six miles from Charlestown! (Southern Agriculturist, Vol. 4, No. 7, July, 1831, p. 391.) The latter seems rather calculated to justify a high degree of skepticism and incredulity; for it is very clear, that the detonation of gunpowder could only affect delicately organized birds by means of the mechanical violence arising from the powerful undulations excited in the adjacent air; and it is hardly conceivable, that sounds proceeding from such a distance, could have any influence on life.

So little is known concerning the laws which govern atmospheric electricity, that many apparently anomalous phenomena frequently present themselves, which seem to be inexplicable upon any acknowledged principles. Thus, there can be no question that electricity is invariably discharged in the direction of least resistance; yet lightning does not always select the most lofty objects near its path, even when they are comparatively good conductors. In the example related by Dr. Tilesius, already referred to, the vehicle was struck while passing along a narrow road embedded in the forest. In the case detailed by the Rev. Mr. Hitchcock, there were several Lombardy poplar trees (Populus dilatata) on the south-west side of Mr. Williams' house, 60 or 70 feet high, rising 30 or 40 feet above the dwelling; and one of them was not more than six feet from the spot where the lightning first struck. (Op. cit. supra, p. 122.) The case of Mr. Boddington and his lady, who were struck by lightning, in England, on the 13th of April, 1832, is in illustration of this

point. The road at the spot where the carriage was struck, was so much hollowed out, that the bank was nearly as high as the top of the vehicle; and a very tall pear-tree, near an adjacent hedge, sustained no trace of injury. (Lond. and Edin. Phil. Mag. 3d Series, vol. 1, p. 196., 1832.) My own observation has furnished me with many analogous examples. Some of the most tremendous electrical explosions I have ever witnessed in this latitude, have been occasioned by the lightning striking in the open, flat rice-fields, and frequently in the neighborhood of tall, solitary cypress trees (cupressus disticha, Michaux.) A quarter of an acre of rice (oryza sativa) is often thus destroyed; but no mechanical effect is usually produced on the moist earth; probably in consequence of its high conducting power. Von Humboldt has made similar observation on the magnificent displays of electrical phenomena, which he witnessed in the intertropical regions of South America. There can be no doubt that currents of air loaded with aqueous vapors, the character of the geological substrata, and a variety of inappreciable meteorological conditions of the atmosphere, may determine the path of least resistance along which the discharge must be transmitted. A more intimate knowledge of the superior currents of air, and of the laws of distribution of the suspended vapors, would tend to elucidate these problems so complicated in appearance. To ascertain the laws of these aerial variations,—to discover the periodicity of these atmospheric oscillations,—it is essential that the observations should embrace a vast period of time to disengage the phenomena from numerous accidental perturbations. In illustration of the manner in which the fixed determinate laws of nature become eliminated from the most complex and irregular phenomena, by the application of the system of numerical averages to a vast number of carefully collected observations extending over a long period,—I will adduce the remarkable discovery of a cycle of eighteen years in the seasons of Great Britain, which Mr. Luke Howard has deduced from a series of meteorological records embracing a period of more than 36 years! It will be noticed that this cycle nearly corresponds with the period of the revolution of the lunar nodes; thus indicating that the attraction of the moon exercises some influence on atmospheric changes, although so obscured and hidden through the operation of foreign causes, as to be rendered cognizable only when our investigations have reference to the mean states of the atmosphere. The varying currents kept up by the action of solar heat and various local influences, tend to involve the problem in complexity; but on an average of years, it resolves itself into a cycle of eighteen years, in which the seasons appear to pass through their extreme changes in respect of warmth and cold, of wet and dryness. It is likewise shown by Mr. Howard, as well as by Sir J. W. Lubbock, that the moon's position in declination, has an influence on the barometrical mean and on the quantity of rain which falls, that is manifested in a gradation of effects which operates through the same cycle, but not in every year alike: there is a constant periodical variation of the variation itself. (Vide Lond. and Edin. Phil. Mag., 3d series, vol. 18, pp. 552, 553, 559. 1841. Also, vol. 21, p. 69, 73. 1842.) The pursuit of such philosophical researches, so admirably adapted for mathematical investigation, must constitute the most effectual method of opposing the torrents of shameless empiricism on the subject of predicting the changes of the weather.

Without doubt, the general principles which govern the discharges of the Leyden jar are identical with those of flashes of lightning; but, per-

haps, electricians, in pursuing the illustration into its numerous details, have carried the analogy beyond its legitimate bounds. A great difference in degree exists in many points of the analogy. The comparative distance of the clouds operating in producing a great excess of electricity in them over and above what is expelled into the earth by induction; the greater area of the earthy disc operating to produce in it a very low degree of tension; and the inferior conductibility of the earth causing a maximum of resistance to the diffusion of the flash towards restoration of equilibrium. The stroke usually enters the earth at one spot, and is required for compensating a large area. The comparatively low conducting power of the earth greatly resists its diffusion, and induces a tendency to divide into several paths; and, possibly, some portion of it may be converted into free electricity by the return of that portion which had been expelled into the lower strata. (Vide, Abstracts of Mr. Charles V. Walker's papers on this subject, in Lond. and Edin. Phil. Mag., 3d series, vol. 21, pp. 63 and 310. 1842. Also, Notice of his Memoir, on the same, in vol. 22, pp. 490–492. 1843.)

However anomalous the phenomena of atmospheric electricity may appear on a superficial glance, yet a more attentive investigation of the subject must develope a stable and definite assurance that they are all harmonized and controlled by fixed laws, which are but formulæ, or simplified expressions of those conditions of action which nature has imposed upon everything terrestrial and cosmical. These, however, are El Dorado fields of research at present; and such is the complexity of the combinations of phenomena which are presented for analysis, that some time must elapse before philosophers will be able to obtain such general expressions for these laws as will lead them to the higher points of generalization. The sum of all the atmospheric phenomena, which give origin to the manifestations of electricity, is to be regarded as a collection of facts; and the great difficulty consists in isolating each of them, so that they may be stated, with clearness and distinctness, in a separate, concise and available form. Were we able to ascertain the changes which take place in the regions of the atmosphere with the same ease that the astronomer watches the motions of the planets, or the chemist observes the formation of a precipitate, the very multiplicity of these changes and the variety of the conditions under which they occur, would be of essential service in the determination of their laws, instead of being, as at present, sources of doubt and embarrassment. The boundaries of astronomical science have been pushed from small and obscure beginnings into the infinite in space, time and number; and so, ultimately, may man be able to look down, with the light of a more advanced philosophy, upon the seemingly capricious and varied phenomena of meteorology,—their multifarious combinations and complexities, their cycles and epicycles,—as he looks into the planetary world, and sees nothing but prospective arrangements, compensations, minute adaptations, comprehensive inter-dependencies, order and simplicity, where now there appears inextricable confusion.

Savannah, August 15th, 1844.

Art. II.—*Nature and History of Vital Statistics—being a Chapter from an unpublished Volume.** By the Editor.

Social physics, as the science of man has been designated by the distinguished M. Adolphe Quetelet, Director of the Brussels Observatory, is now the subject both of scientific and of popular attention; and to the cultivation of this department of knowledge, men of the highest endowments have devoted their lives. Believing that the numerous facts developed of late years, and which come under the head of the above title, pertaining as they do to physiology, would, if properly condensed, prove valuable to our readers, we shall make an effort to lay before them, from time to time, the treasures thus accumulated. The subject now chosen is one that comes strictly within the domain of medical science. Our readers, we trust, have, one and all, a taste for this kind of knowledge; and should such be the case, we shall feel amply rewarded for the labors of our researches.

Man's existence may extend to 100 years, or even more; but the doom of his death, though we know not the time nor the mode, is certain and irrevocable. As every human being, from the moment of his birth, carries in his bosom his own sentence of death, he has no guarantee from present circumstances to count the next hour his own; and this uncertainty as regards a solitary individual of the human race, so well expressed in the burial-service—"In the midst of life, we are in death"—is extended, in the popular thought, to the community at large—to mankind viewed in the collective masses of nations. It is now demonstrated, however, that mortality is subject to a law, the operation of which is not less certain and regular than that of gravitation. It is proved by observation that, in the successive rise of generations, in the gradual development of their energies, and the consequent process of decay, mortality and sickness observe fixed laws—that they are always the same under the same circumstances, and only vary in proportion as the causes favorable or unfavorable to health preponderate.

The physiology of the animal economy intimates that it was formed to exist in healthy action, during a period of three score and ten years; yet, in consequence of a defective organization, whether hereditary or acquired, or from the immediate agency of surrounding physical causes, every generation gives a certain ratio who fall sick at all ages, and of these a certain number die.

But in comparing the sanitary condition of different nations, the knowledge alone of the absolute mortality or morbility will not suffice; inasmuch as experience proves that, although these may be the same in two nations, yet the effect on the national strength and resources will depend upon the relative ratios in the periods of childhood, manhood, and old age. As the first and the last classes are mere consumers, while the second alone consists of producers, we see of what little importance children and octogenarians are, in estimating the national strength.

Mankind, studied in large numbers, possess certain common qualities, which vary according to determinable laws; as, for instance, the ratio of

* *The Development of Man's Faculties, and the Laws of his Mortality and Reproduction, viewed in their Relations to Hygiology.*

the sexes at birth, their weight at the same epoch, their gradual growth until the period of maturity, their attainment of a certain mean age, and their liability to death in the same ratio when exposed to similar causes; and the same remark applies to the development of the moral and intellectual qualities of man, and also of his propensity to crime. It is the enumeration and generalization of these facts that constitute what has been happily designated by Laplace, "Vital Statistics." Statistics, or rather the numerical method, is not unfrequently regarded as a mere substitution of figures for words; but this undoubtedly is an error. The difference is well expressed in the following remark: "The *sometimes* of the cautious is the *often* of the sanguine, the *always* of the empiric, and the *never* of the sceptic; but the numbers 1, 10, 100, 1000, have but one meaning for all mankind." But the substitution of figures does even more than this, for it is not only a language but a science. In the history of all sciences, it will be found that it was the introduction and use of accurate measures that forms the epoch between the period of obscurity and of a brighter development. It was by the gradual invention of instruments that astronomy shook off the delusions of astrology, and chemistry that of alchemy. The theory of definite proportions of the latter, like the theory of gravitation of the former, is a numerical theory. There is, of course, no certainty out of the pale of the pure mathematics, as probabilities pertain even to the most perfect of the mixed mathematical sciences; and the extent to which a science admits of the application of numbers, may be regarded as a fair measure of its certainty. It is only those sciences which deal with *unorganized* matter, and its relations and properties, that evince an acknowledged superiority in the exactness of their results. Thus astronomy is more perfect than chemistry, because it deals only with the *relations* of matter without reference to its *properties*. Now among the sciences which deal with the properties of matter, the most perfect is that of chemistry. It is surprising to see with what extreme certainty the chemist can analyze a compound body; and, on the other hand, having thus in his possession several forms of matter, which, in the present state of the science, are regarded as elementary, he may often reproduce the original compound at will, or combine them at pleasure, so as to create new compounds, the result of which he foretells with perfect certainty. Thus is calculation the very "soul of science;" for the chemist has arrived at sufficient certainty in his art, to be able to use in his synthesis an element rendered as pure as the same element previously procured in its purity by his analysis. But between the world of unorganized and of organized matter, there is an essential distinction; and it is over the former that the triumph of the chemist is limited. In the world over which life presides, however perfect the power of the chemist may be in resolving matter into its original elements, all his attempts at reconstructing it, with very few exceptions, are entirely baffled.

Now, this is just the point at which we have been aiming to arrive, in order to show why medicine, to which vital statistics, as constituting indisputably a part of general physiology, belong, has never become a perfect science. It is only the atomic affinities of matter that chemistry investigates, but matter is endowed with other properties which are still more important to man; and as these properties and relations of matter are the objects of sense, it follows that the sciences which deal with the former, as they are less simple and less easily submitted to measurement

than the latter, are less perfect than those which comprehend merely the relations of matter. Now, as it is the province of medicine to examine the most complex properties of matter, in its most complicated form, which is that of organized structure, it must necessarily ever remain an imperfect science. Let us compare it, in this respect, with meteorology, which is wholly dependent upon the observations made by such instruments as the barometer, hygrometer, thermometer, anemometer, electrometer, etc.; and we find that the numerical measure thus applied to the principal elements of all atmospheric changes, affords results much more accurate and important than the physician can ever hope to obtain. Now, in medicine, the objects to be examined are, beyond comparison, infinitely more variable and complex; nor does it admit of the application of the most perfect instruments of calculation. As the complex phenomena of health and disease are made up mostly of elements which allow of no exact measure, the description must necessarily be clothed in the imperfect and the inexact language of the senses. Hence the source of all the knowledge to be obtained relative to the human body in health and disease, is to be found in the five following words—"*Ars medica tota in observationibus;*" but the term observation is here used in its enlarged sense of collecting facts, according to the method practised by Hippocrates and enforced by Bacon, and also of arranging and classifying them, and lastly submitting them to analysis. The imperfections of medicine as a science are consequently inherent in the subject itself.

"The physician, unlike the mathematician, is not the creator of his own science; unlike the astronomer, he has no simple relations of matter to deal with; he cannot, like the chemist, make any two things which he examines or uses identical; the objects of his study are more variable than the winds and tides, and the materials with which he works infinitely more difficult to adapt to their uses than the matter which the mechanic or the engineer presses into his service. In all his preliminary studies (with the exception of inorganic chemistry), in all his original inquiries, in all his practical applications, he encounters the varying effects and complicated phenomena of Life. The human frame unites within itself all that is most wonderful in contrivance and most elaborate in workmanship. Its structure as much surpasses the most skilful work of man's hands, as its functions do the play of his most ingenious mechanism, and its products the results of his most refined chemistry. That which he knows bears no proportion to that of which he is entirely ignorant; what he sees, he sees but darkly; much of what he does, he does but guessingly. He seeks for causes, but they elude his search; the vital principle which contains the solution of his difficulties baffles him at every turn; he strives, as it were, to seize it by force, but the violence which he uses defeats itself, and the tortured body dies that it may preserve the secret of its life. Such, and so inscrutable is the body in health; disease surrounds it with new mysteries."*

The employment of mathematics in medicine is far, however, from being wholly impracticable. Our present means of observation and present state of mathematical analysis, are still too imperfect to enable us to trace the elements of the human body through the cycle of organization; but these same insuperable obstacles are encountered even when dealing with the inorganic atoms of chemistry and meteorology. To the great questions

* Brit. and For. Med. Rev., July, 1841; to which excellent Review, we are indebted for some others of the preceding remgrks.

of population, mortality, and national health, which belong equally to political economy and to medicine, mathematics have been applied with great success; but we are obliged to admit that little of this progress is due to the medical profession. All the phenomena of the human frame, but more especially the physiological acts connected with reproduction, the development of man's faculties, and mortality, when examined and measured in a great number of individuals, it has been proved by observation, furnish a mean result equally correct with that of any other physical phenomena. Thus the actions, which spring from hidden principles in the organization, are found to be constant; and more than this, even the accidents to which life is exposed are found to be the same. In comparing, for example, the number of male and female baptisms registered in England, during seven successive years, commencing with 1821, we find the number of boys baptized for every 1000 girls was, 1048, 1047, 1049, 1046, 1047, 1043, 1043. This constant return of the same phenomena as regards the physical and moral man, provided no violent change is experienced in society, as it is an important point to have it undeniably established at the outset of these investigations, it may be well to illustrate by additional examples. As regards diseases, it will suffice to give a few instances from the Fifth Registration of Births, Deaths, and Marriages in England, as presented in the following table:

	1838.	1839.	1840.	1841.
Pneumonia:—				
Total deaths,	17,999	18,151	18,582	17,997
Deaths to a million living,	1,219	1,200	1,209	1,154
Phthisis:—				
Total deaths,	59,025	59,559	59,923	59,592
Deaths to a million living,	3,996	3,939	3,897	3,822
Child-birth:—				
Total deaths,	2,811	2,915	2,989	3,007
Deaths to a million living,	190	193	193	193
Violent Deaths:—				
Total Deaths,	11,727	11,632	11,594	11,100
Deaths to a million living,	794	769	754	712

But even the conditions which seem to depend wholly on accidental causes, have the same constant recurrence, as is shown in the following table in reference to the recruitment of the French army.

NUMBER OF YOUNG MEN IN FRANCE WHO HAVE BEEN EXCUSED MILITARY SERVICE ON ACCOUNT OF BODILY INFIRMITIES.*

Causes of Unfitness.	1831.	1832.	1833.
Wanting fingers,	752	647	743
,, teeth,	1,304	1,243	1,392
Deafness and dumbness,	830	736	725
Loss of other limbs or organs,	1,605	1,530	1,580
Goitres,	1,125	1,231	1,298
Lameness,	949	912	1,049
Other deformities,	8,007	7,630	8,494
Diseases of bones,	782	617	667
Short-sighted,	948	891	920
Other affections of the eyes,	1,726	1,714	1,839
Itch, (?)	11	10	10
Scald head,	749	800	794
Leprosy,	57	19	29
Other cutaneous diseases,	937	983	895
Scrofulous affections,	1,730	1,539	1,272
Affections of chest,	561	423	359
Hernia,	4,044	3,579	4,222
Epilepsy (falling sickness)	463	367	342
Different other diseases,	9,168	9,058	10,286
Weakness of constitution,	11,783	9,979	11,259
Insufficient size of body,	15,935	14,962	15,078
Amount of whole class of certain age,	295,978	277,477	285,805

The reports of criminal justice in France show the same remarkable constancy as regards the annual perpetration of crimes, and their punishments, as appears from the subjoined table† :—

	1826.	1827.	1828.	1829.	1830.	1831.
Murders in general,	241	234	227	231	205	266
Gun and pistol,	56	64	60	61	57	88
Sabre, sword, stiletto, poniard, dagger, &c.	15	7	8	7	12	30
Knife,	39	40	34	46	44	34
Cudgels, cane, &c.	23	28	31	24	12	21
Stones,	20	20	21	21	11	9
Cutting, stabbing, and bruising instruments,	35	40	42	45	46	49
Strangulations,	2	5	2	2	2	4
By precipitating and drowning,	6	16	6	1	4	3
Kicks and blows with the fist,	28	12	21	23	17	26
Fire,	..	1	..	1	..	..
Unknown,	17	1	2	..	2	2

These results assuredly merit the attention of the philosopher; for it is here seen that even moral phenomena, apparently the most accidental or fortuitous, are reproduced annually in the same numbers. Aye, even murders, which are generally committed at the close of quarrels, without any premeditation, do not only present very nearly the same annual numbers, but experience further shows that the instruments used to accomplish the object bear like proportions in each year. Contemplate but for

* Quetelet's Treatise on Man. Edinburgh edition, p. 109.
† Ibid., p. 6.

a moment the multiplied circumstances upon which each birth, each death from a particular disease, each fatal accident, and each murder, presented above, depends, and especially as regards the last, the concurrence of how many tumultuous passions in man is required in addition! Yet, strange to say, the moral and physical causes in operation were so constant, that the annual results are actually less fluctuating than the products of the soil, or even the mean temperature of the atmosphere!

The same conclusion is most strikingly confirmed by the table relative to the French recruits. It is seen that, among the young men liable to serve as conscripts, nearly the same number must be annually exempted on account of deficiency in fingers and in teeth, or in consequence of deafness, goitres, short-sightedness, scald-head, epilepsy, insufficient size of the body, etc. The same constancy, according to M. Quetelet, is observed in the numbers of those exempted on account of being first-born, or orphans, or being the sons of widows, blind people, etc.; and equally unvarying is the annual number of those self-mutilated, in order to avoid military service, and those capable of reading and writing, and those who have had no instruction.

It is further added by M. Quetelet, that he knows from reliable sources, that the number of letters delivered at the post-office of Paris, is not only nearly the same annually, but that the same constancy exists in the number of letters forgotten to be sealed, or which, in consequence of illegible handwriting, insufficient addresses, etc., could not be delivered.

It is thus clearly established that moral phenomena, observed on a great scale, partake of the character of physical phenomena; and thus we see illustrated the fundamental principle, adopted as our motto on the title page,* that "*the greater the number of individuals observed, the more do individual peculiarities, whether physical or moral, become effaced, and leave, in a prominent point of view, the general facts, by virtue of which society exists and is preserved.*"

Believing that human actions are regulated by fixed laws, M. Quetelet, the distinguished Belgian philosopher, has nobly undertaken to develope the *Science of Man;* and these objects of scientific research, he considers, should be to inquire,—

"1. What are the laws of human reproduction, growth, and physical force—growth of his intellectual powers, and of his disposition, more or less great, to good or evil; the laws regulating the development of his passions and tastes; the mode of succession of the materials he produces or consumes; the laws of human mortality, &c.

"2. What influence has nature over man; what is the measure of its influence, and of its disturbing forces; what have been their effects for such and such a period; and what the social elements chiefly effected by them?

"3. Finally, can human forces compromise the stability of the social system?"

We assuredly concur with him in the opinion, that the solution of these questions would form some of the noblest and most interesting results of human research; and certainly, whatever has been accomplished in this department of human knowledge, at least so far as regards the development of the human faculties, is due mainly to the skill and acumen in

* This refers to the work at large, as similar references which occur hereafter will be understood by the reader.

applying the important science of numbers by the author of the treatise, "*Sur l'Homme, et le Developpement de ses Facultés.*"

"Man," says Quetelet, "is born, grows up, and dies, according to certain laws which have never been properly investigated, either as a whole or in the mode of their mutual reactions. Hitherto the Science of Man has been limited to researches, more or less complete, respecting some of its laws, to results deduced from single or insulated observations, and to theories often based on mere glimpses; and these constitute pretty nearly all the materials it possesses. It must be admitted, however, that for nearly two centuries various distinguished men have studiously inquired into the rate of reproduction and mortality of mankind; the differences which age, sex, profession, climate, and seasons, produce in regard of births and deaths, have been assiduously studied. But they have neglected to put forward, with sufficient prominence, the study of his physical development (*bodily growth*), and they have neglected to mark by numbers how individual man increases with respect to weight and height—how, in short, his forces are developed, the sensibility of his organs, and his other physical faculties. They have not determined the age at which his faculties reach their maximum or highest energy, nor the time when they commence to decline. Neither have they determined the relative value of his faculties at different epochs or periods of his life, nor the mode according to which they mutually influence each other, nor the modifying causes. In like manner, the progressive development of moral and intellectual man has scarcely occupied their attention; nor have they noted how the faculties of his mind are at every age influenced by those of the body, nor how his faculties mutually react."

The distinguished author does not, of course, here refer to the speculative sciences, by means of which all moral phenomena, prior to his time, had been investigated. Indeed, there are learned men, even at this day, who adhere to the old opinion, that as soon as the moral and intellectual faculties become objects of research, we must abandon the mode of inquiry pursued in the investigation of the other laws of nature. To them it seems absurd to attempt to reduce to precise laws, phenomena which are influenced by a cause so capricious as human volition. It is now, however, indisputably established, that all these facts are susceptible of numerical appreciation. It has been already shown that human actions are regulated by fixed laws. "Experience alone," says Quetelet, "can, with certainty, solve a problem which no *à priori* reasoning could determine. It is of primary importance to keep out of view man as he exists in an insulated, separate, or in an individual state; and to regard him only as a fraction of the species. In thus setting aside his individual nature, we get quit of all that is accidental, and the individual peculiarities, which exercise scarcely any influence over the mass, become effaced of their own accord, allowing the observer to seize the general results."

The remark made at the beginning of this chapter relative to the uncertainty of life, while that of masses can be calculated with all the certainty of the laws of gravitation, is equally applicable to man's physical and moral faculties. Hence the necessity of studying the masses, with the view of freeing our observations from all that is accidental or individual; and in direct proportion to the number of individuals observed, does the doctrine of probabilities show a nearer approximation to the truth. It consequently follows that, as these laws present nothing indi-

vidual, their application to individuals is only within certain limits. In this respect, they stand relatively the same as the tables of mortality, from which, notwithstanding their general results enable assurance societies to calculate their annual profits, no one pretends to determine the precise period of any individual's death. A happy example in point may be here introduced. M. Quetelet has shown, as will be seen in the sequel, that the maximum of the energy of the passions occurs about the age of twenty-five; and in attempting to give an example of the analysis of this development, he spoke thus: "So that if there existed an art which, in its exercise, developed itself in a ratio with the passions, and without requiring preliminary studies, its maximum of development would occur about the age of twenty-five." To this reasoning, the Genevese philosopher, M. E. Mallet, opposes the following example.* "If there has been a writer who has shone brilliantly, and deeply impressed the public, by reason, not of his works and learning, but of the impulses of the passions, certainly Jean Jacques Rousseau is that man. Now, it was not before the age of forty, fifteen years later than the period signalized as the maximum one of his passions, that Rousseau commenced to write." To this M. Quetelet happily rejoins: "What would be the reply of the author now quoted, whose writings on population are justly esteemed, if I were to say to him in my turn, that the death of J. J. Rousseau did not take place till after the age of sixty-five years; that is to say, a long period after the epoch signalized by the law of mortality calculated for Geneva, and after he had long passed the average life of man? Must we then conclude that the table of mortality for Geneva should be rejected? What does one individual example prove in such matters?"

These remarks are here presented as introductory to the details to be presented relative to the development of man's faculties. "The laws," says Quetelet, "presiding over the development of man, and modifying his actions, are in general the result of his organization, of his education or knowledge, means or wealth, institutions, local influences, and an endless variety of other causes, always very difficult to discover, and some of which may probably be never made out." Besides, the laws pertaining to the social body change with the changes in their causes; and hence, as the law of mortality has experienced a change in the progress of civilisation, it follows that a corresponding influence must have been exercised upon the moral and physical condition of man. The causes, whether natural or disturbing, which influence human development, have been well studied by M. Quetelet; and, consequently, the study of the social body, which has been designated by Quetelet, *social physics*, is no longer left to a kind of empiricism; but we are now enabled to recognize the direct causes by which society is influenced, and even to determine the measure of that influence. It is shown, for instance, by the statistics of the French tribunals, as appears from tables already given, that the same crimes appear annually in the same order, with the most remarkable constancy. "There is a tribute," says Quetelet, "which man pays with more regularity than that which he owes to nature, or to the treasure of the state, namely, that which he pays to crime. Sad condition of humanity! We might even predict annually how many individuals will stain their hands with the blood of their fellow-men, how many will be forgers, how many will

* Bibliothèque Universelle de Genève, July, 1835.

deal in poison, pretty nearly in the same way as we may foretell the annual births and deaths!"

The positive views taken in these researches by M. Quetelet, relative to the social system, have startled some minds. By one class it is alleged that he has exaggerated the field of the exact sciences; and by another, it is contended that they lead to materialism. The former objection, it has already been shown, is completely unfounded; and as respects the latter charge, his being a materialist or a fatalist, he has been equally successful in refuting the objections brought against his mode of reasoning. More than this, he shows that he is neither a theorist nor a system-maker, but that his object is simply to arrive at truth, by the legitimate way of the examination of the incontrovertible facts furnished by statistical data. "If certain deplorable facts," he says, "present themselves, with an alarming irregularity, to whom is blame to be ascribed? Ought charges of materialism to be brought against him who points out that regularity?" The circumstance here referred to, is the fact of the remarkable constancy with which crime is committed, the evidence of which has already been adduced. "From the examination of numbers," he says, "I believed myself justified in inferring, as a natural consequence, that, in given circumstances, and under the influence of the same causes, we may reckon upon witnessing the repetition of the same effects, the reproduction of the same crimes, and the same convictions." It is shown, for instance, by observation, which has been confirmed year after year by statistical records, that it is, in the present state of French society, about the age of twenty-five when the propensity to crime, especially as regards murder, is at its maximum. To present the views of Quetelet upon this subject, in the clearest light, it will be necessary to make one or two more quotations.

"Name them as you will," he says, "the actions which society stamps as crimes, and of which it punishes the authors, are reproduced every year, in almost exactly the same numbers; examined more closely, they are found to divide themselves into almost exactly the same categories; and, if their number were sufficiently large, we might carry further our distinctions and subdivisions, and should always find there the same regularity. It will then remain correct to say, that a given species of actions is more common at one given age than at any other given age."

To the Edinburgh edition of his treatise "On Man," from which we quote, M. Quetelet has furnished a preface, in which he defends it from the objections brought against it subsequently to the issue of the original edition at Paris. He here shows "*that crime pursues its path with even more certainty than death.*" He remarks:—"Twelve years have elapsed since the data furnished by the tribunals of justice in France were collected with great care and exactitude, and since the ages of criminals were first marked; and, in each succeeding year, they have reckoned from about 7000 to 8000 individuals accused before the courts of assize; and it is still betwixt the ages of twenty-one and twenty-five, that, all things being equal, the greatest number of persons are to be found in that position. I have taken, for the same years, and for the city of Paris, the mortality of a period of ten years, and have found, that, though my observations included a much larger number of persons, and these pertaining to a much more homogeneous population, the mortality of the capital proceeded with less regularity than the crimes of the kingdom, and that each age paid a more uniform and constant tribute to the jail than to the tomb."

His conclusion, from these unerring facts, is thus expressed:—"Society includes within itself the germs of all the crimes committed, and at the same time the necessary facilities for their development. It is the social state, in some measure, which prepares these crimes, and the criminal is merely the instrument to execute them. Every social state supposes, then, a certain number and a certain order of crimes, these being merely the necessary consequences of its organization. This observation, so discouraging at first sight, becomes, on the contrary, consolatory, when examined more nearly, by showing the possibility of ameliorating the human race, by modifying their institutions, their habits, the amount of their information, and, generally, all which influences their mode of existence. In fact, this observation is merely the extension of a law already well known to all who have studied the physical condition of society in a philosophic manner: it is, that so long as the same *causes* exist, we must expect a repetition of the same *effects*. What has induced some to believe that moral phenomena did not obey this law, has been the too great influence ascribed at all times to man himself over his actions."

It is this annual reproduction of the same crimes, under the same social circumstances, which has excited the greatest alarm among a certain class, who ask—"What becomes of human free-will and free-agency?" As this is a question deserving of the most earnest attention, it will be best to present Quetelet's reply in his own translated words:

"Timorous persons have raised the cry of fatalism. If, however, some one said, 'Man is born free; nothing can force his free-will; he lies under the influence of no external causes; cease to assimilate him to a machine, or to pretend to modify his actions. Therefore, ye legislators, repeal your laws; overturn your prisons; break your chains in pieces; your convictions and penalties are of no avail; they are so many acts of barbarous revenge. Ye philosophers and priests, speak no more of ameliorations, social or religious; you are materialists, because you assume to mould society like a piece of gross clay; you are fatalists, because you believe yourselves predestined to influence man in the exercise of his free-will, and to direct the course of his actions.' If, I say, any one held such language to us, we should be disgusted with its excessive folly. And wherefore? Because we are thoroughly convinced that laws, education, and religion, exercise a salutary influence on society, and that moral causes have their certain effects. Am I a fatalist, then, when I declare that you have greater reason for so thinking than you had imagined? That is the real state of the question; we differ only about degrees. Which of us is in error? To determine this, it is necessary to examine our motives for conviction. Mine, like yours, rest first of all on observation. We both call in experience to the support of our opinions; but, in your case, the experience is based on vague uncertainties, whilst I, more circumspect, strive never to lose sight of those scientific principles which ought to guide the observer in all his investigations. My aim is not to defend systems, or bolster up theories: I confine myself to the citation of facts, such as society presents to our view. If these facts be legitimately established, it follows that we must accept of and accommodate our reason to them.

"Now, what do these facts teach us? I repeat, that in a given state of society, resting under the influence of certain causes, regular effects are produced, which oscillate, as it were, around a fixed mean point,

without undergoing any sensible alterations. Observe, that I have said *under the influence of the same causes;* if the causes were changed, the effects also would be necessarily modified. As laws and the principles of religion and morality are influencing causes, I have then not only the hope, but, what you have not, the positive conviction, that society may be ameliorated and reformed. Expect not, however, that efforts for the moral regeneration of man can be immediately crowned with success; operations upon masses are ever slow in progress, and their effects necessarily distant."

In these researches, we behold the first successful attempt to apply the art of calculation to the social movements of the human being. Among the remarkable truths developed, it will be seen that both the intellectual and moral faculties of man have their laws of development; and hence, among the most interesting parts of the science of observation, as applied to anthropology, will be found the analysis of intellectual man through his productions, and of moral man through his actions. The time has fortunately arrived for the examination of man through his moral anatomy, with the view, when the real sources and amount of the evils under which he labors, shall have been discovered, of providing the proper remedies.

"In respect to the charge of materialism," it is happily remarked by Quetelet, "it has been reproduced so often and so regularly on every occasion when science attempted to make a new step, and when the spirit of philosophy, breaking through its ancient barriers, attempted a new road, that it seems almost superfluous at the present day to reply to it, the more especially that the fanatical spirit is no longer backed with chains and tortures."

It is surely no evidence of a tendency to materialism, for man to employ the noblest of his faculties, in the endeavor to determine the sublimest laws of the universe. In the eye of the modern astronomer, the globe inhabited by man, and which was regarded by the ancients as his universe, is but a grain of dust floating in the immensity of space; and does not this substitution of our magnificent solar system, with the inseparable associations of the mighty wisdom that presided at its formation, and which continues to maintain this revolving system of unnumbered worlds, give us a nobler idea, correspondently, of the majestic power of Divinity? And though the comparative insignificance of this floating grain of dust, a large portion of whose inhabitants with their monuments resulting from twenty ages of labor, may be, in a moment, swept into ruins by a tempest, an inundation, or an earthquake, may cause man to feel humbled in his animal pride; yet, in surveying this augmented knowledge in astronomical science, his pride of intellect may justly feel exalted in the highest degree! In reference to this harmony of creation, Quetelet remarks: "Would it not be an absurdity to suppose, that, whilst all is regulated by such admirable laws, man's existence alone should be capricious, and possessed of no conservative principle? We need not hesitate in asserting that such a supposition, and not the researches that we propose making, would be injurious to the Creative Power."

With these remarks upon the *nature* of Vital Statistics, it may be well now to proceed to a consideration of the science, *historically*.

In the history of past ages, a striking defect is the absence of statistical knowledge. As the maintenance of peace and good order depends more upon the social condition of a country than upon its political state,

history, instead of being scarcely more than a record of the actions of a government, ought to present the actual aspect of a country both socially and politically. This is obvious enough when we consider that the great object of government is the well-being of the community. Indeed, it was numerical analysis applied to governmental objects that first bestowed the true character of a science upon political economy. Hence the study of statistics, as regards the light shed upon man's social relations and political condition, as well as the elucidation of his natural history in health and disease, is now justly regarded as highly valuable and instructive.

Statistics, from the German, *staat*, properly speaking, means the science of states, being nearly synonymous with the terms "political economy," "political science," "social science." The term *scientia statistica* seems to occur for the first time in an historical work by Achenal, Professor of History in Göttingen, published in 1749. As statistics, properly viewed, is merely the application of numbers as a means of comparison in all the exact sciences, their employment cannot be regarded as a new method of investigation: but from this period forward every application of what constitutes but the numerical method in the service of the various sciences of observation, in which it had never before been employed, as political economy or medicine, was dignified with the sounding title of *statistics*. Hence, statistics, which will doubtless continue to be viewed in this light, may be regarded as a science so modern that it cannot be dated further back than the beginning of the current century. It is true that some defective data for estimating the population at periods more remote, have had their origin in the purpose, among various governments, of apportioning the quota of taxes or of soldiers to be raised. Of this character, for instance, have been, in England and some other countries, the poll tax, the income tax, the hearth tax, and the doomsday book.

In view of the utilitarian character of the present age, the pursuit of statistics in all its various applications, need not excite our surprise; but when we look back to the palmy days of the Roman Empire, comprising the greater part of Europe, the whole northern border of Africa, and stretching far into Asia, and find periodically laid before its Senate, the fullest details relative to the population, wealth, and domestic relations, both at home and in the most remote provinces, we certainly may feel surprise. At the same time, however, we may cease to wonder at the greatness attained by this extraordinary people. By Servius Tullius, for example, an accurate census of the people, with a valuation of their property, to be taken every five years, was instituted. He ordained that every Roman citizen should, upon oath, take an estimate of his property, and that he should state his place of residence, his own age, the names of his wife and children and their ages, and also the number of his slaves and freedmen; and all this information was required under the penalty of a confiscation of goods, and of being scourged and sold as a slave, as one deemed no longer worthy of freedom.

How valuable would such a return now be, as an exposition of the social condition of this people! But the Roman historian, dazzled by the false glare of military glory, deemed it beneath his notice to chronicle the effects of social institutions! The Roman censuses that have come down to us, according to Smith's Dictionary of Greek and Roman Antiquities, "refer only to those of man's estate, or able to bear arms."

The same work says that the census at Athens seems to date from the constitution of Solon, and that similar requisitions took place in other states of Greece. There is one document, however, regarded as authentic, recorded by Domitius Ulpianus, Secretary to the Emperor Alexander Severus, which has been already introduced to the notice of the reader. By this census, according to Ulpianus, registers of population, sex, age, disease, and death, were kept during a period of a thousand years, that is, from the time of Servius Tullius to Justinian.

We are told by Livy that a similar survey of the persons and estates was ordained to be made in the provinces,—a fact that will call to the mind of the Biblical reader, that Joseph, when "there went out a decree from Cæsar Augustus, that all the world should be taxed," went himself, with Mary his espoused wife, from Nazareth to Bethlehem, to be taxed; and that while there, in the city of David, the Saviour was born.

As regards modern statistics, it may be justly considered as a subject of honest pride to every American, that at the close of our Revolutionary war, when neither England nor France had counted her numbers, our youthful Republic, boldly basing the principle of representation upon an actual enumeration of the people, proclaimed to the world a Constitution, declaring that "Representatives and direct taxes shall be apportioned among the several States, which may be included in this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three-fifths of all other persons. The actual enumeration *shall* be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct."

This was certainly a bold measure, characteristic of the sanguine temperament of the times, when we recollect the then non-existence of population returns, except the most vague, even in the most civilized portions of Europe; and we find that, in accordance with the undoubting belief in the feasibility of procuring the requisite returns, the enumeration was actually effected in 1790, the limit prescribed by the Constitution.

In England, it is not until 1801, that we have an example of an actual census, notwithstanding a bill to that effect was, in 1753, introduced into Parliament. It was in the year 1780, that Dr. Price's celebrated treatise on annuities appeared, in which it was maintained that the population of England, estimated at less than five millions, was decreasing; but it was proved, by the census of 1801, that England must have had, at that period, a population exceeding seven millions. In France, it was not until 1817, that a regular census was taken; and in Russia, a census taken every three years, comprising a register of births and deaths, was instituted as recently as 1820.

In the prosecution, however, of this great subject of the development of the laws of population, during the last fifty years, it is with regret that we are obliged to confess that our own country has fallen immeasurably behind those of Europe. Up to this day, with the exception of the early parish registers of some towns of New England, we are wholly destitute of a registration of births, deaths, and marriages, save some imperfect data furnished by the States of Massachusetts and New York. In England there have been registers of these events, in connection with the church, kept as far back as 1538; and these, notwithstanding, far from

being complete or accurate, have served many useful purposes. In Scotland and Ireland, however, and more especially in the latter country, these parish registers, from various causes, are so defective, as to be entitled to no dependence as regards statistical results. In many countries of Europe, however, parish registers of births, deaths, and marriages, have been kept for perhaps a century and a half back, which have served, in an eminent degree, to determine the laws of population. Independent of those just referred to in England, Scotland, and Ireland, they are found in Norway, Sweden, Russia, Prussia, Holland, Germany, France, Spain, Portugal, and other countries. At Geneva, they have existed since 1549, including a registration of the disease causing death. In Germany, they seem to have been introduced even earlier than in England, for extracts from the Augsburg mortuary registers, which go back to the year 1501, are given by Süssmilch. It was about the beginning of the seventeenth century, that these registers were established throughout Europe generally. Even Mexico has a registration of births, deaths, and marriages, the trustworthiness of which is confirmed by Humboldt.

It was in 1592, that the London bills of mortality, containing the records of the baptisms and deaths, were begun; but it was not until after the plague of 1603, that they have been kept regularly.

But the French have a system of registration, which, compared with that established by England in 1837, seems even more complete; and this is part of that grand system of laws, which, known under the appellation of the *Code Napoleon*, will serve to elevate this great name even higher than the point bestowed by its associate military achievements. This system of registration, apparently so burthensome in the operation of its minute details, is fully carried out not only in the 40,000 communes of France, but also in those parts of Belgium and Prussia, which at the period when the "Code" went into operation, lay within the jurisdiction of France. In Spain, the registration is, in some respects, even more full and perfect than in France; and in Austria, some of these requirements are exacted under heavy penalties. A noble example, however, was set by England in 1837, by establishing the "Act for registering births, deaths, and marriages," including a registration of the causes of death. Voluminous annual reports have since regularly appeared; and this national system of registration, in the importance of its results, has already repaid, more than ten-fold, the trouble and expense that it has involved; proving alike invaluable to the philosopher, the physician, and political economist, to the statesman and legislator. Its utility has been sufficiently established, on the ground alone that it has developed the true laws of population and of mortality in connection with the value of life annuities and insurances, besides answering such other purposes, as facilitating the legal distribution of property by proving the connection of families. Moreover, as the deaths and their causes are scientific facts, admitting of numerical analysis, and as medicine, like the other natural sciences, is beginning to substitute numerical expressions for vague conjectures, the registration has also already afforded rich contributions, both as regards the practice and the principles of medicine. The doctrine of averages thus applied has been not unaptly styled the mathematics of medical science. We may thus study the laws of vitality, and the variations of these laws in the two sexes at different ages; and we may also determine, as regards the production of disease and consequent death, or the improvement of public health, the influence of climate,

comprising locality, seasons, and all other physical agencies, as well as that of occupation and civilisation. Much light will thus be thrown upon many of the most interesting questions of social statistics. Nor are these data of value alone as regards the present day, but they will serve as the means of comparison in ages to come. Seeing the vast advantages that would necessarily result from a similar registration in the United States, we were early impelled to make an effort toward its introduction; and it was this motive mainly that first led us to read the paper before the New York Historical Society, which finally grew into the present volume. It may be well, therefore, to adduce several additional striking facts relative to the advantages of legislation in our own country.

It was well remarked by an eminent English jurist, "that it appears to him fully as necessary for the preservation of the rights of individuals to preserve a register of births, deaths, and marriages, as it is to preserve a register of deeds."

M. Adolphe Quetelet, Director of the Brussels Observatory, says—

"It is a subject of wonder to every intelligent stranger, that, in a country so advanced as England, with so many illustrious persons occupied in statistical inquiries, and where the state of the population is the constant subject of public interest, *the very basis on which all good* legislation must be grounded, has never been prepared."

This was, of course, before the existing admirable Registration act.

Lastly, it is thus remarked by John Finlaison, Esq., Actuary of the National Debt Office of England, who resorted, for a special purpose, to the public registers of Ostend, in Flanders:

"My attention was drawn to the extreme precision of their system, which, I believe, is precisely the same as prevails in France. * * * The town clerk stated to me that it was impossible for any person in their country to lose his inheritance, because he and his ancestry could be traced back with the utmost certainty for any number of years."

Now, these remarks are equally applicable to our own country; and, in illustration, the following political example, from the first annual report on the registration of Massachusetts, may be adduced:

"The right of a representative to his seat in our General Court, is disputed. He was elected by a majority of *one vote*. One of the persons voting for him was an old man, who had not been assessed for several years; but who claims the right of suffrage, because, he says, he is seventy years old and upward. His age, therefore, is a fact of essential importance, and its decision may determine the political character of the State government. Without a registry, the question cannot be answered without great difficulty. With a registry, it is put at rest at once and beyond all controversy."

ART. III.—*On the Pathological Effects of Alcohol.* By JOHN C. PETERS, M.D.

IN company with my friends, Drs. GOLDSMITH and MOSES, I have examined the bodies of nearly seventy persons who have died from the excessive use of ardent spirits.

External Appearances.—These presented nothing peculiar, except that in some the muscular development, but more frequently the adipose, was very great; in others the bloated face, tumid belly, thin and flabby legs and arms, were quite characteristic.

Head.—Invariably there was present more or less congestion of the scalp, and of the membranes of the brain, with considerable serous effusion under the arachnoid, while the substance of the brain was unusually white and firm, as if it had lain in alcohol for an hour or two, and the ventricles were nearly or quite empty. In not more than eight or ten instances did we find more red spots upon the cut surface of the brain than usual. The peculiar firmness of the brain was noticed several times, even when decomposition of the rest of the body had made considerable advances; typhus fever is the only disease in which we have noticed a like firmness. Occasionally a few drachms of colorless, or reddish turbid serum, were found in the ventricles of the brain.

The Lungs were generally healthy, except that congestion of them was frequently met with. Where large quantities of spirits had been taken shortly before death, the lungs were often found in a state of extensive splenization; they appeared perfectly saturated with dark blood, which soon changed to a florid red on exposure to the air, except that which flowed from the large, severed blood-vessels, for this remained thick, dark, and tar-like. The parenchyma was heavy and semi-solid to the feel, but softened; for the finger could be easily forced through it. We must make particular mention of the infrequency of phthisis in drunkards; never have we met a tubercular abscess in them, even of the smallest size, while a small number of chalky tubercles was frequently noticed; and cicatrices also were often met with, and were marked by presence of puckering of the surface of the lungs, of solid bodies which were readily felt before the lung was cut into, and when this was done, they were found to consist of lumps or stripes of callous fibrous tissue, around which we rarely discovered a few discrete, grey, crude, small, tubercular granulations; in every instance these appearances were strictly confined to the upper third of the superior lobes, and the rest of the lungs was entirely free from either old or recent tubercular disease. The bronchi were almost always found reddened, somewhat dilated, and more or less filled with catarrhal secretions. The readers of the London Lancet will remember that Marshall Hall has lately recommended the constant application to the chest of folds of linen or flannel soaked in alcohol, as a cure for incipient phthisis; we should judge that this might prove serviceable.

The Heart was always flabby, enlarged, dilated, but little or not at all thickened, and its external surface loaded with fat. Fluid, dark, cherry-juice-like blood was often found in both ventricles, in the aorta and pulmonary arteries. Coagula are rarely or never found in the heart or large blood-vessels. In some cases where sudden death has been occasioned by the excessive use of ardent spirits, no other appearances are found in

the body except the fluid condition of the blood, the above described congestion of the lungs and membranes of the brain, with serous effusion under the arachnoid.

The Stomach represents various appearances; in some habitual drunkards the mucous membrane is perfectly white, but somewhat thickened, with distinct flat, *mamellonated* elevations of small size. Dr. MIDDLETON GOLDSMITH was one of the first to call attention to the fact, that when a large quantity of undiluted spirits had been taken shortly before death, the stomach was often found wrinkled,* as if from the action of an astringent substance; the tops of the wrinkles or rugæ presented a punctated and vivid red appearance, while the depressions between were blanched, as if from the action of alcohol, and the whole mucous membrane was coated with a thick layer of blanched and very tenacious mucus. In other instances we found thickening and *mamellonation* of the mucous membrane, with patches of slate-grey chronic inflammation, upon which spots of punctated, star-like, or diffused hemorrhagic inflammation had supervened. In ten or twelve of the worst cases, in which from three pints to two quarts of liquor had been swallowed within thirty-six or forty-eight hours before death, we found extensive hemorrhagic inflammation of the larger portion of the stomach, with effusion of blood in large patches under the mucous membrane. In several instances in which unknown persons were found in the river, with severe cuts or bruises upon their heads or bodies, we have been enabled to testify positively, from the above appearances of the stomach, and those of the liver and omentum presently to be described, that they had been deep in liquor just before they had fallen into the water, and that in all probability no murder had been committed, as the cuts or bruises would lead one to suspect.

The Liver, in moderate drinkers, was found a little larger than natural, somewhat softened, and its external surface spotted with patches of fatty infiltration, which extended but two or three lines into the parenchyma; the color of the rest of the organ was nearly natural, and the edges retained their normal sharpness. In higher degrees it was considerably larger, the edges more obtuse, and the patches of fat larger and more numerous. In old drunkards the liver was very large, weighing at least six to eight pounds, often ten to twelve; the edges were very thick and much rounded; the parenchyma almost white with fat, soft, fragile, and the peritoneal covering could be torn off in very large pieces with ease. Granular liver was found in four or five cases only. *The gall bladder* was always large and filled with bile; gall-stones were found in two cases only, and singularly enough, both on the same day; none were found either before or after.

The *Spleen* presents but few characteristic alterations. It generally retains its normal size, and is softened; occasionally it is rather larger than natural, but as a rule, the small size of the spleen contrasts strongly with the very great enlargement of the liver.

The appearance of the *omentum* is very peculiar; it is loaded with an ashy-grey slushy fat. Our attention was called to this sign in Vienna; it is there regarded as so characteristic, that a man is often judged to have been a drunkard, from a glance at the omentum, when the abdomen is first laid open.

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* This fact was noticed by us several years since, in the New York Med. and Phys. Journal, also in the Boston Med. and Surg. Journal.—C. A. L.

The *kidneys* are generally somewhat enlarged, flabby, their cortical substance infiltrated in numerous small spots, with a whitish matter, either albuminous or fatty; occasionally they are granular. The pelvis and uterus are generally in a state of chronic, slate-grey inflammation.

The *bladder* generally presents nothing peculiar except in the worst cases, in three or four of which we have found it in a state of hemorrhagic inflammation, which rivalled in extent and severity that which has already been described as occurring in the stomach.

The *mesentery* is always loaded with a thick layer of fat.

The *small bowels* in the majority of cases are literally filled with bile, and their mucous membrane thickly coated with a very tenacious mucus. In eight or ten of the worst cases, numerous and extensive patches of hemorrhagic inflammation were found, with copious effusion of blood in and beneath the mucous membrane. This may account for the frequency of discharges of blood from the bowels of drunkards.

The whole body of drunkards, with the exception of the brain, passes over into decomposition with unusual rapidity.

The most important appearances are the fluid and venous condition of the blood and the great superabundance of fat. According to Steinheimer and Roesch, alcohol acts directly upon the blood, and drunkenness is owing to an alcoholic venous plethora, in which the proportion of hydrogen and carbon in the blood is much increased. The same alteration of the blood occurs in poisoning with narcotic drugs, and the delirium and excitement of the nervous system produced by them and alcohol, is supposed to be secondary to this change in the quality of the blood. According to Orfila, if a large quantity of alcohol be taken during, or shortly after a meal, it coagulates the albuminous portions of the contents of the stomach, and this coagulated albumen passes off almost unchanged into the small intestines. The action of the gastric juice upon other portions of the food is prevented, and they undergo acetous fermentation. A large quantity of pure alcohol also reaches the duodenum, mixes with the bile, which loses its alkalescence, and can no longer be precipitated into insoluble flocculi by the addition of the acid chyme, as is normally the case; in the natural state this insoluble precipitate from the bile is not reabsorbed, but is cast out with the fæces, but in drunkards no such precipitate ensues, the bile remains fluid and unchanged by the chyme, and a larger portion of it is reabsorbed; hence the bilious difficulties in drunkards and the frequent occurrence of jaundice in them. Large quantities of acid chyme and imperfectly digested food pass along the small intestines, and even reach the cœcum and colon, where they also undergo acetous fermentation; this is sufficient to account for the dyspeptic difficulties and sour eructations in drunkards. The blood which returns from the intestines into the vena porta system and liver, is more or less mixed with alcohol, imperfect bile and other impure matters; hence the venous plethora of the vena porta and subsequent affections of the liver; as much bile is brought back to the liver, it is, doubtless, re-secreted from it with great rapidity; hence, among other causes, the large quantity of bile which is usually found in the gall bladder, and small intestines.

The chyle which is absorbed by the lacteals must be very imperfect, and is mixed with more or less altered alcohol; of course the blood which is formed from it is equally imperfect. If alcohol be added to blood which has been drawn from a vein, the blood becomes dark, it

loses its normal opacity, becomes transparent, and changes to a cherry-juice-like fluid. With the aid of the microscope we see the blood globules gradually losing their red coloring matter, which becomes equally dissolved and diffused through the serum, which assumes the peculiar cherry-red color; this serum coagulates to the consistence of thick milk, but cannot form solid coagulæ, and no watery particles separate from it. These appearances agree with those of the blood of topers, which is thick, but fluid; it coagulates very loosely, contains but little fibrine, but much albumen and fat.

According to Rokitansky, Andral and Engel, the blood in tubercular cachexia is arterial and rich in fibrin; while in the cancerous cachexia and typhous fever, it is more venous, it abounds in albumen, and is deficient in fibrin; hence alcohol would seem to produce a state of the blood opposite to that which occurs in tubercular disease, and is somewhat similar to that which obtains in cancer; therefore, it may prevent the development of the former, and hasten that of the latter.

ART. IV.—*Extracts from the Recorded Proceedings of the New York Medical and Surgical Society.*

Case of Congenital Occlusion of the Vagina. By John Watson, M.D.—The patient, a young German woman, with the external parts of generation well formed, and not destitute of sexual desire, had never menstruated, and on inspection she was found to be actually without any traces of a vagina. Her health was good, and there was no abdominal swelling. An operation for establishing the vaginal passage had been performed by Drs. Hoffman and Maxwell, but owing to the patient's neglecting to follow their instructions, the parts again united. A second operation was performed by Dr. Watson, as follows:—A silver catheter was introduced into the urethra, and held by an assistant. The fore finger of the left hand being inserted into the rectum, the parts were then carefully divided at the natural situation for the vagina, between the catheter and the finger, which served to protect the urethra on one side, and the rectum on the other. After the bistoury had penetrated about an inch and a half, the tissues were found to yield slightly to pressure. The further extension of the passage was effected partly by stretching, and partly by cutting, until, at length, the passage was restored as far as the os tincæ. This was evidently very small, and the whole uterus appeared to be atrophied. There was no accumulation of menstrual fluid. The passage was kept open several months by means, first, of spunge, and subsequently, a full-sized pessary. The patient has been seen within a few weeks. The passage is still pervious, but much contracted. She has neglected the use of the pessary since May last.

Pleuritis terminating in Empyema, in an Infant aged nine months. By John S. Vandervoort, M.D.—This case occurred in the practice of a medical friend who requested Dr. V. to make a post mortem examina-

tion. From the previous history, it appeared that five weeks before death, the child was attacked with symptoms of influenza of a mild character, which did not seem to require any special care. Gradually the symptoms became more severe, accompanied with cough. Pneumonia of the right lung was feared, and the patient was freely leeched and blistered. Various expectorants were given. About two days before death some dulness was detected on percussing the right side of the chest, and the existence of pleurisy was then suspected. There was considerable irritability of the stomach during the child's illness. At the autopsy the right cavity of the chest was found to contain one pint of pure pus, the pressure of which on the lung had converted it into a fleshy mass, less than half an inch in thickness. Exterior to the lung, and adhering firmly to it, there was a dense layer of coagulable lymph. Pneumonia existed in the lower lobe of the left lung. The stomach showed strong marks of inflammation, and its mucous membrane was much softened. The other organs were all healthy.

Death resulting from the Application of a Blister. By John Watson, M.D.—A sprightly but scrofulous-looking child, about four years old, had been subject to conjunctival inflammation, which had been formerly relieved by a small blister placed on the back of the neck. The ophthalmia again appearing, the child's aunt thinking it unnecessary to send for their physician, resorted to the blister behind the neck, as on the former occasion, and allowed it to remain undisturbed for about eight hours, when it was removed, and the exposed surface dressed with plantain leaves. The blister was rather large, and slipped sideways and downwards so as to inflame the skin over an extensive surface, reaching from the nape of the neck to the back of the right ear, and downwards as low as the clavicle. The integuments became highly inflamed, and there was a disposition to sloughing, especially over the edge of the sterno-cleido-mastoid muscle. The child was seen by Dr. Watson, in company with Dr. Macready, and then had been suffering twelve days, but was able to play about the house, complaining only when the sore was disturbed by dressing. It had been dressed with poultices, and with the ointment of hydriodate of potassa. Finding that the sore was excessively sensitive, and the child refractory and suffering severely from the dressing, an anodyne poultice was recommended, which was afterwards changed for unctuous dressings. At the end of a week from the first visit, she was again seen, and found in a state of nervous prostration, bordering on collapse. Her skin cold, lips blue, respiration short and labored, her intellect clear, her temper irascible and fretful, her pulse about forty. She was also vomiting continually, especially after attempting to swallow, or when moved, or when her head was elevated. She made no complaint of pain in her stomach, or other internal organs. She was constantly crying for drink, which she swallowed in a ravenous manner, without assuaging her thirst. The matter ejected from the stomach was simply a deep greenish bile, diluted with water. Stimulants were applied with some partial benefit, but she continued to sink, and died the following morning. No autopsy was made. She was exhausted, from the irritation of the exposed and ulcerated surface, and died in a state of pure nervous exhaustion. The vomiting came on before the other symptoms of collapse, and continued to the last.

Electro-Magnetism as a Remedial Agent. By Gurdon Buck, M.D.—Respecting this case, Dr. B. gave the following details:—A nervous female, aged 40, had been subject to derangement of her menses since the age of eighteen, and she also suffered from severe neuralgic pains in the spine. About two years ago she had the epidemic influenza, since which she has not been able to speak above a whisper. Various remedies had been resorted to during several years that she has been under Dr. Buck's notice. Recently, electro-magnetism was daily employed without acupuncture. Since its use, her voice has returned, and her menses have appeared without their previous painful symptoms.

Opium, a Hazardous Remedy in Strangulated Hernia.—The following cases show the danger of using opium or its preparations when strangulation of a hernia is suspected. Many similar instances might be recorded, in which, by the use of opiates, the symptoms of strangulation have been masked, and operations deferred until too late to be successful.

Dr. Buck stated that he was called to operate on a lady aged 60, whose hernia (femoral) had been strangulated two days. She had been put under the influence of tobacco and an anodyne injection administered on the first day she was taken ill, which was Sunday. On Monday she was found in a state of profound narcotism. On Tuesday, Dr. Buck was called in. The patient then lay in a stupor, and did not appear to suffer. The hernial tumor was large, and its contents were omentum and intestine. The operation was performed the same day, and death ensued thirty-six hours thereafter. On examination, the strangulated portion of intestine was found of a purplish brown color.

Dr. Watson reported as follows:—A lady, aged 64, a rather small and spare woman, about six weeks before the present attack, was seized with severe and sudden pain in the bowels, which was considered bilious colic. She was treated with very large and repeated doses of opium, which for the time overcame the pain. On Tuesday, May 28th, while busying herself about her household duties, she was again taken as before, and the former treatment resorted to. The amount of opium was very great, some ten or twelve grains per diem for several successive days. The pain was effectually overcome, and the only evidence of narcotism produced, was a pleasant hallucination without sleep, and a tingling or itching sensation over the whole body. She continued under treatment in this way up to the evening of May 31, and, as a small swelling had recently been detected in the right groin, and her bowels had not been opened for nearly three days and a half, a consultation was requested. Dr. W. now saw her for the first time, about 9 or 10 o'clock at night, and recommended the operation. Some hesitancy existing, Dr. Mott also met the other attendants in consultation at midnight. The operation was resolved upon, and was performed by Dr. Watson. The hernia was femoral; no fluid existed in the sac.

The protrusion was small, and the parts united by adventitious adhesions, the result of inflammation, probably existing there since her first attack some six weeks before. On the next day the narcotic condition still existed, bowels still constipated, notwithstanding the use of oil and enemata. On June 2d, the bowels were freely and spontaneously moved for the first time. After this, all evidence of narcotism subsided, and the case began to promise well. The wound was dressed on the

sixth day, and it was then dry, and appeared to have united by the first intention, but in a day or two afterwards it opened and gave issue to a very offensive discharge, which excoriated the surrounding parts. The whole of the pubic region and the right groin became inflamed, and the discharge for several days appeared to increase in quantity, and become more offensive. On the 8th June, a large slough was found lying under the integuments in the bottom of the wound, which was removed. Portions of fæces appeared on the dressings. The wound gradually contracted, and she continued under treatment until July 15, when a truss was applied.

Another instance was mentioned by Dr. Watson. The husband of a female aged 60, objected to the performance of the operation on his wife, and in consequence it was deferred from hour to hour. Sixty drops of laudanum were given to allay irritation, and a consultation called. Croton oil was prescribed to relieve the bowels. At the next meeting the patient was so comfortable and free from pain that the operation was deferred until the next morning, when she was found moribund, being twenty-four hours from the occurrence of the strangulation.

Medullary Tumor in a child aged six years. By B. W. McCready, M.D.—This disease was preceded by emaciation, pain and fretfulness. The abdomen became tumid, and gradually increased in size. On examination a large medullary tumor, weighing nine pounds, was found in the abdomen, lying between the ribs and spine of the ileum of the right side, involving the aorta and vena cava.

Hæmatemesis, from the use of liquor. By John Watson, M.D.—A German grocer, of lymphatic temperament, about thirty-six years old, and though not a severe drinker, in the daily habit of tippling with his customers, was suddenly taken ill on the 28th August with alarming and repeated hemorrhage from his stomach, which was vomited up in such quantities as to cause almost instant syncope. When seen by Dr. Watson, he was pale, cold, and almost pulseless; and perhaps nearly two quarts of blood mixed with food, which he had recently swallowed, lying on the floor beside him. Sinapisms were immediately applied to his arms and lower extremities, iced water and lumps of ice were directed to be given. On the following day his bowels were freely moved with castor oil, which brought away a great quantity of blood from the intestines. The patient had no pain, excepting over the stomach when pressed. For a month or two previous he had been dyspeptic, and had become pale and languid, but not actually so ill as to be alarmed about himself. He kept quiet for a few days after this attack with no return of bleeding, but with some febrile reaction, generally in the afternoon.

On the 1st Sept. he had another sudden turn of vomiting blood, almost as severe as the former, and apparently induced by indiscretion in eating, which was contrary to instructions. This was also soon checked; and afterwards a blister was applied over the stomach, and the patient put on an alterative course of medicine, consisting of blue mass, ipecac. and aloes, which was taken so as to produce two or three evacuations daily, without exciting nausea. In the course of a week the mercury began to affect his gums, and these were kept tender for two or three weeks, at the end of which time he was so far relieved as to attend to his business. He improved rapidly, and has entirely relinquished his former habit of drinking.

ART. V.—*An Account of an Operation for the removal of a Congenital Cataract of the Capsulo-lenticular variety.* By H. H. TURNER, M.D., U.S.A., in a letter to DR. THOMAS MOWER, M.D., U.S.A.

EARLY in July, I was requested to visit a negro boy, who was affected with congenital cataract of both eyes, and to operate for the removal of the disease.

I found the boy about six years of age, of good constitution, with all power of vision lost in the right eye, and that of the left so feeble that large objects could only be seen, and these imperfectly, when brought very near to the face. The cataract in the right eye was of a milky whiteness, so complete and uniform, that no color could be perceived in it when the pupil was artificially dilated, and so large, that it appeared to occupy the whole posterior chamber; that in the left eye was of a bluish grey color, which was deeper in the centre than at the margin of the pupil. They presented the same appearance in both eyes from birth until about six months ago, when the boy had an attack of the measles, during the course of which the eyes became inflamed, and the pupil of the right changed from bluish grey color to a milky whiteness.

Having satisfied myself that the cataract in the right eye was not complicated with amaurosis, or any preternatural cohesion to the iris, or with any other affection of the eye, and that no disease prevailed in any other part of the body, I determined to operate upon it immediately, and to leave the left eye for a subsequent period, as its vision was not entirely wanting, and a favorable change of action might be induced in it by the operation on the right. I directed the patient to take a seidlitz powder every second morning, and to be kept on a light diet for a week; after which, I operated in the following manner. The arms and legs of the boy being tied, he was seated on a straight-back chair, to which he was securely bound; his head was firmly supported against the back of the chair by the hands of an assistant, and the lower eyelid depressed by the fingers of another. Not being equally expert with both hands, I took my position behind the patient, having previously dilated the pupil with a solution of the extract of belladonna; and with a speculum in the left hand, elevated the upper lid, and controlled the motions of the eye, which were quick, frequent, and irregular. Having determined on the needle operation (under the impression, from the size and appearance of the cataract, that it was of a soft or fluid character), I introduced Scarpa's needle through the tunics of the eye, about two lines posterior to the junction of the sclerotic coat with the corner, and about one line below the track of the long ciliary artery on the external convexity of the ball. After penetrating the coats of the eye, I directed the extremity of the needle upwards, and having depressed somewhat the lens, brought it down immediately in front of the capsule, keeping its point presented backwards to avoid injuring the iris. I then lacerated the capsule freely, and finding the lens of a soft consistence, divided it into four or five parts, and with the point of the needle carried three of them (one being one-third the size of the lens) into the anterior chamber. The capsule was opake, and so tough that its rupture was attended by an audible snap, which made me think that the extremity of the needle had broken in the eye, but this unpleasant idea was soon removed by carrying the

needle into the anterior chamber, where I saw that it was uninjured. After the needle was withdrawn, a light compress of old linen was put over both eyes and confined by a bandage, the patient placed in a dark room, directed to take a seidlitz powder the next morning, and be kept on low diet.

The day after the operation, July 16th, I found the eye doing well, the conjunctiva somewhat injected, and a slight effusion of blood beneath that part of it where the needle was introduced. The extract of belladonna was again applied, and the pupil kept dilated by it for a week. Scarcely any pain attended the operation, and no pain or appreciable amount of inflammation followed. On the fifth day, I removed the bandage and compress, and covered the eyes with a green shade; and on the 22d day, but a small portion of the largest of the three fragments, which were carried into the anterior chamber, remained, the others having been removed by absorption; the patient was possessed of tolerable vision, and running about the yard without assistance, delighted with the sight which he had obtained. A small portion of opake lens can yet be seen behind and below the pupil, which is rapidly disappearing. No deformity, irregularity, or change in the mobility of the iris, has followed.

The above operation differs from the posterior one usually performed for the removal of congenital cataract from the eyes of children, in this; that I freely lacerated the capsule, divided the lens and carried the greater part of it into the anterior chamber before withdrawing the needle from the eye; instead of simply lacerating the capsule, and leaving the lens in situ, to be removed by the action of the absorbents, or future operations.

It is recommended, by authority, not to attempt too much at one operation, for fear of exciting high inflammation. But when the pupil is freely dilated, I can perceive no objection to dividing the lens and removing it from its connexions; in doing which, if proper care is observed, the vitreous humor, iris and ciliary processes can sustain no more injury than if laceration of the capsule only is attempted. The coats of the eye are as much injured in the one case as the other, and the inflammation following is probably as great in the one instance as the other; and should simple laceration be followed by high inflammation of the eye, and but little absorption of the lens, the cataract may form adhesions to the iris, which will materially interfere with proceedings in a second operation. And when laceration of the capsule only is accomplished, whether by the posterior operation or keratonyxis, a second introduction (and frequently a third) of the needle is generally necessary.

ART. VI.—*Medico-Legal Inquiry; or, a Report of the Evidence taken in the Case of the People* vs. *Riley Drake, on an Indictment for Manslaughter in the Fourth Degree; tried at Binghamton, May*, 1844. By N. S. DAVIS, M.D.

As everything relating to legal medicine is of interest to the profession, I send you all the material facts connected with the above-mentioned case, which, if you deem worthy of record, you will give a place in your excellent Journal of Medicine and Collateral Sciences. The

defendant, Riley Drake, was charged with having produced the death of Miss Frost, by the careless and unskilful administration of lobelia.

N. S. D.

Specification:—"The grossly ignorant, careless, and unskilful administration of lobelia to Miss Lucina Frost, by which her death was produced."

EVIDENCE FOR THE PEOPLE.

Dr. A. H. Brownson, sworn, says, "He was called to visit Miss Lucina Frost on the 11th September, 1843. Found her laboring under febrile excitement. Considered her complaint a case of bilious remittent fever. Continued to attend her as physician, until Thursday, the 28th of September, when she was convalescent, and had been for several days. Patient had some appetite. Witness also testifies that lobelia is a violent emetic; which, if taken in large doses and not discharged from the stomach, will act as a fatal poison. Thinks an emetic of any kind would have been very improper for the deceased when he last saw her."

Dr. Brownson's testimony was corroborated in every point by that of Dr. P. R. Brooks, who was called to see the patient two or three times in consultation with Brownson.

Nancy Sutcliff, sworn, says, "She has known the deceased about eight years. Was there about a week before her death, and up to the time of her death. Saw Riley Drake there on Sabbath (Sept. 24th), when the patient asked him if he thought she was getting better, and he said not. He, Drake, had something to say to her every time he was there. On Thursday, she (deceased) said to him, that Brownson told her that her fever had turned, and that she was better. Drake said that Brownson was mistaken, that her fever had not turned, and that she never would get well under Brownson's treatment. Deceased asked Drake if he could help her, and he said he could. Her father would not give his consent to have Drake. Friday night, Sept. 27, Drake came in, and she (deceased) told him if he thought he could help her, she wished he would. He gave her some medicine, to prepare her stomach for an emetic. The next morning he came in and gave her an emetic. He gave her small seeds steeped in water. Witness saw the seeds. She vomited twice. After vomiting, appeared to feel better. Probably a teaspoonful of the seeds was given. Nothing else given. Drake did not come again till afternoon. Patient appeared better till noon, when she became distressed for breath, seemed filled up on her stomach, and continued so until Drake came in the afternoon. He ordered ginger-tea, which was made, and *three tea-cups full* given. He then steeped *lobelia* in a tea-cup, and gave her that, *seed* and *all*. Tea-cup was about half full. She drank about half of it; and then wanted some physic. He gave her some. She then said she thought she ought to take more. She then took the *rest* of the *lobelia*. He then gave her some red stuff, and then some *nerve root* tea. She died in half an hour after the lobelia was first administered."

This evidence was confirmed in every essential particular by that of Olive Fairchild and Charles Gearnsey, with the additional fact, that the deceased was severely *convulsed* after taking the emetic, on Saturday, just previous to her death.

Dr. Stephen D. Hand, sworn: "Witness is a practising physician, residing in Binghamton, Broome co., N. Y. Says he was called to ex-

amine the body of Miss Lucina Frost, on Sunday, Sept. 31, 1843. Was informed that she died on the Saturday previous (Sept. 30). External appearances of the body natural. Examined the stomach, and other internal organs. Found a *table-spoonful* of *lobelia seeds* in the *stomach*. Mucous membrane of stomach softened and much inflamed. Intestines also considerably inflamed. The heart and other organs healthy. Witness has no doubt but the lobelia contained in the stomach killed the patient. Thinks there was enough there to destroy the life of any person, unless thrown off. All parts of the lobelia plant contain the same properties. Thinks, from the description given of the patient by Drs. Brownson and Brooks, that an *emetic* of *any kind* would have been very *improper* under the circumstances."

The testimony of Dr. Hand was corroborated by that of Drs. West, Brooks, and Cook, who were also present at the post mortem examination.

Drs. Thomas Jackson and N. S. Davis, both residents of Binghamton, were also sworn in regard to the properties of lobelia, which they stated "to be an active narcotico-acrid poison, when taken in large doses."

This closed the evidence on the part of the prosecution, when the defendant called Charles Gearnsey, Haman Gearnsey, Samuel Martin, Harry Martin, Alvah Parsons, Nathaniel Boughton, Charles Elliot, Sherlock Black, Rhoda Gearnsey, George Doolittle, Uri Doolittle, James Russell; all of whom testified that they were personally acquainted with Riley Drake, and considered him a skilful physician of the *Thompsonian* school."

The defendant then called on the following *Thompsonian* and *Botanic* doctors, to prove the qualities of lobelia:—

Folkert Van Vleck, sworn; "Lives in Hamilton, Mad. co. Is a physician of the Thompsonian order. Twelve years' practice. Have had as many patients as I could attend to. Have used lobelia in almost every case of inflammation and fever, and usually with good success. In cases of remittent fever, should use lobelia as an emetic, and afterwards in broken doses. My patients have always recovered. Lobelia produces an emetic effect on the healthy stomach. It will not produce inflammation under any circumstances. Did not hear the testimony of Dr. Brownson. Heard Dr. Hand's. Thinks that lobelia would not produce the effect described by Hand."

Cross-examined.—Says he has lost only one *fever patient*. Has lost some with consumption. Gives lobelia in consumption. Has been present at a post mortem examination. Thinks that a single dose of lobelia could not be taken so as to produce death; it might be by repeating the dose. Cannot tell whether tobacco is a *poison* or not. Thinks cicuta would produce nausea. Has never studied surgery, anatomy, &c., and do not deem it necessary.

William Rose, sworn: "Is a botanic doctor. Has used lobelia for thirty years, in all cases where emetics were needed. In 1825 had one hundred cases of scarlet fever, in which he used lobelia, and did not lose a patient. Has no knowledge of its possessing poisonous qualities. Understands by *narcotic* poisons that which stops the circulation of blood. Don't know how opium produces death. Thinks arsenic would produce death quicker than cicuta."

Jabez Jeffers, also a botanic physician, gave similar testimony to that of Dr. Rose.

Thomas W. Griffin, sworn, says he is a Thompsonian physician; has practised eighteen years as such. Says he uses three articles, viz., lobelia, Cayenne paper, and Barbary bark, in all cases, and in all *stages* of disease, and under all *circumstances*, and *always* with *good* effect. Thinks that lobelia is not a poison.

The testimony being closed, the case was ably argued by Lieut.-Governor Dickinson for the defendant, and by the Hon. Joshua A. Spencer in behalf of the people; when it was submitted to the Jury by Judge Morrell. The Jury, after an absence of a few hours, returned with a verdict of guilty. Judgment was, however, suspended until next term of Court.

ART. VII.—*On the Diet of Infants in Affections of the Bowels.* By JAMES STEWART, M.D., of New York.

THE subject of diet has been regarded from the earliest period of medical science as one of the greatest importance to the physical well-being of man at every period of his life. The influence which certain articles of food exercise upon the body, in preserving it in a healthy state, or in predisposing it to the attacks of the various diseases which appear to be a portion of his inheritance, has long been considered, as indeed it ought to be, as of more importance than the air he breathes. While miasms and other atmospheric impurities produce their effects comparatively in so limited a number of instances as to be almost capable of enumeration, our food, comprising the very materials of which our bodies are built, being so varied in the number of the articles of which it is composed, so liable to be improperly used by being taken in an improper manner, or in an excessive quantity, may become a cause of derangements, difficult indeed to enumerate. It is unnecessary to enlarge upon this point; and indeed it is scarcely within the scope of our subject. The experience of most persons must bear testimony to the truth here stated; while scientific records, both medical and hygiènic, abound with concurrent testimony, and attest the universal importance of the intimate relation subsisting between the supply of suitable food, and the preservation of the body in its healthy vigor, as is seen in the greatly improved health of the men composing navies and armies, where the observance of the required rules is a subject of compulsion.

If the proper use of appropriate food is of so much consequence in a state of health, much more does it demand the attention of all, and especially of the physician, when the body is contending with the derangements of disease,—when the disorder of the system materially interferes with the proper discharge of the functions of life. The greater or less change in the appetite for food, or its entire absence, which occurs in every disease, at once points out that an important change has occurred in the functions of the organs destined to supply the daily waste of the body. The natural instinct of man leads him to make some alteration in his diet when sick, and the experience of all ages proves the benefits

of such a course when judiciously adopted. The establishment of a well-regulated diet is the chief resort of designing impostors in the management of chronic diseases, and which it is so difficult for the physician to enforce. He perhaps cannot say that certain enumerated articles of diet are incompatible with the medicine he is giving, for that may not be the truth; he can only direct his patient to follow a certain course of diet in connection with the medicine as necessary for his cure, and which the patient will follow just so long as he is inclined to do, and no longer; but if he can be made to believe that while he is taking certain kinds of medicine, a list of articles with which he is furnished, is little less than poison, it is easily conceived with what care he will unwittingly carry out the views of his medical attendant. Few persons are aware of the great variety of food that is taken in the course of a day; let any one enumerate all that is usually consumed, and he will be at once convinced that a very important change must be effected in some chronic diseases by a reduction in the number of articles. In diseases of an acute character, there is but little danger of a transgression of the rules imposed, for the appetite for food, especially for that of a solid kind, is altogether absent.

Of much more importance is the subject of diet under those circumstances where the period of life and disease unite to impart a peculiarity requiring a closer attention to the ingesta.

The period of infancy presents to our attention circumstances in connection with diet, which have no parallel at any other time of life. In childhood and infancy the desire for food is frequent; capillary action, secretion, deposition and interstitial increase proceed with great vigor,—all, the consequence of this period being the period of growth; wherein it differs very essentially from the adult state, as, in the latter, the action of vitality is comprised in the preserving and recuperative processes; to which is added in the former, that of the development of the body. Growth is much greater during the first year, and the constant desire for food during that period is a circumstance of common observation. In young infants the whole time is occupied with receiving nourishment and repose.

With this peculiarity of early infancy, there is also another more worthy of note, as it has a direct practical bearing on the subject before us—and that is, in the fact that the food of all animals in their earliest period of existence is derived from animal substances, even in those which afterwards subsist upon vegetable grains; the chick, even after being hatched, uses a part of the egg for its nourishment. Man after infancy obtains his nourishment from both animal and vegetable substances, and the great variety of articles of food makes a curious exhibition of his omnivorous nature, the effect of custom, climate, religion, etc. The carnivorous propensities of the people at the extreme North with their feasts of whale blubber, and the Indian Brahmin with his meal of rice; the cannibal of the South Pacific Ocean, and the luxurious tables prepared by the most scientific French cuisinier for the civilized convivialist—the oak bark bread of one nation, the flesh-feast furnished by dogs, rats, mice of another—or the snakes, lizards, caterpillars, locusts, worms and other reptiles of the African negro, and even the meal of clay used by the Otomacs as mentioned by Humboldt, certainly present a wide variety in the articles used for sustenance, without considering the minutiæ of our daily food, to prove that man is omnivorous. But under all the cir-

cumstances of climate, whether in the frozen region of the North, or under the burning sun of the tropics,—of superstitious customs, or savage barbarity,—whatever be the circumstances influencing the character and quality of man's diet, there is for him in a state of infancy but one kind of food —and that of an animal nature. Milk is his sole article of sustenance until the time when a change in his system takes place, when a new arrangement of his organization requires him to seek his food among more varied substances, and to which his instinct invariably directs him. Comparative anatomy affords its evidence to the necessity of adhering to this one kind of food. The form of the infant's stomach is much more conical than that of the adult, and resembles in this respect the stomach of carnivorous animals; and the facility with which an infant vomits or rather regurgitates its food is analogous to the ease with which the dog or cat vomits whenever anything is swallowed, even in an inconvenient manner. In the horse, rabbit, or hare,—animals altogether gramenivorous, the stomach differs very essentially in its form, resembling much more the stomach of an adult,—vomiting can scarcely be excited even with the strongest emetics. The nature of the infant's food may very rationally be inferred from this analogy.

If, therefore, nature has provided but one kind of food for the infant, a sudden change to substances essentially different in their nature must be injurious, to a greater or less extent; this is a natural and direct inference from the facts already stated. In adults, where every species of food is used, an entire change, and a restriction to one course of diet, are always productive of important effects upon the general system; and where a scarcity of food has compelled large numbers of men to alter their food and suddenly to adopt entirely different substances from what they were accustomed to eat,—as was the case in some parts of France, in the year 1817, when a failure of the crops obliged the inhabitants to submit to great transition, and to feed upon whatever vegetables could be found—extensive disease and serious permanent effects are the results.

The influence of an entire alteration of food, from its powerful effects upon the system, causes it to be regarded as a measure of great value in the treatment of many diseases, and the change to vegetable food is not unfrequently an important remedial measure. In the adult such a change is but the restriction of him to a class of substances that is natural to him, and which he can easily assimilate; and therefore does no violence to his physical nature. In the infant, on the contrary, the adoption of a vegetable diet is actually contrary to the arrangement of his digestive organs, and to the provision which is naturally made for his daily sustenance; and in the diseases of the stomach and bowels, must, from the extra demand made upon them to assimilate substances foreign to their nature, add to the existing derangement. Acidity, flatulency, gripings, diarrhœa, and other symptoms of indigestion, are of very common occurrence in young infants; and indigestion is the most ordinary affection at that early period, showing how easily their digestion can be impaired. A very obstinate disease will sometimes arise in infants about the time of weaning, and particularly if the change from the bland food furnished by the mother be sudden; hence the care usually taken to accustom the infant to a different species of food, by commencing feeding it some time before this period, and thus gradually accustoming it to the necessary alteration of diet. If this precaution is necessary to prevent injury where nature indicates that a different kind of food is required, how

much more care is needed when greater injury is likely to arise on a sudden change, at a period when there is no such natural indication, and which it is so common a practice to disregard upon the invasion of any affections of the bowels. Immediately upon the appearance of these, arrow-root, tapioca or sago formed into jelly, rice or barley water, is given, from the supposed bland and soothing qualities of these various articles, which it is supposed render them peculiarly applicable to the inflamed mucous membrane of the parts affected. Such is undoubtedly the case in the majority of instances in childhood and at adult age, but in infancy I very much question whether this course is followed by any other than an injurious effect. I have watched carefully the influence of these substances for some years past, and am satisfied that the additional labor the digestive organs have to perform in their attempts to assimilate an unnatural food, greatly aggravates the disorder of the bowels; and if they should fail in digesting the entire quantity, the remainder must be a foreign substance to the bowels, and thereby become an additional source of irritation. It is well known that vegetable food in general requires for its digestion more time and more energetic action of the digestive organs than animal food; flatulency and acidity are more frequent upon its use. Under ordinary circumstances feculent nourishment passes much more quickly through the intestines than gelatinous, albuminous or fibrinous food. It very often swells and undergoes some degree of decomposition, giving rise to the extrication of gas either in the intestines or stomach, and even when perfectly digested hunger returns very quickly, whenever the patient is kept exclusively upon it. Some kinds of food are much more difficult to digest than others, and although there are a variety of circumstances in the individual which influence the alteration of sustenance taken into the stomach, yet the digestibility of food is very often effected by circumstances relating to the food itself. Thus, fixed oils and fats are slow of digestion, as is known to all dyspeptics; so also vegetable substances exhibit this indigestibility in a greater or less degree, when in a crude or raw state, or in a farinaceous or any other artificial condition. If these effects are produced in the adult, for the reasons already mentioned, it must be much more the case in the infant, and many an instance of the obstinate perseverance of disease of these parts may be referred to the injudicious system of feeding during its prevalence.

It is a rare event to have the secrets of the digestive process revealed, and subjected to the test of actual experiment during life or on a post mortem examination. The former has been exhibited to us in the case of an adult by Dr. Beaumont; and the well-known facts there elucidated have been considered of the most important character. Of no less value are the facts exhibited by post mortem investigations of children, made at Paris a few years since, by M. Natalis Guillot, for the purpose of ascertaining the condition of the contents of the bowels of such as died under the use of the ordinary diet of the hospitals. It is the custom at these, and similar institutions, whenever an infant is sick, to withdraw it from the breast, and to substitute for the milk some farinaceous substance made fluid by boiling: arrow-root, gummed rice water, or a thickened preparation of rice, known by the name of "Crême de riz," and other preparations of a similar nature, forming the diet of the sick infant. In the reported cases of the foundling hospital, and those for the reception of sick children, prescriptions of this nature form a very important part

of the treatment, as will be seen by referring to the different treatises of French authors on diseases of children. The mortality in the French hospitals is very great, and opportunities are thus continually afforded for examination, in such numbers as to establish to a certainty almost any fact which requires the proof of anatomical demonstration. The attention of M. Guillot being directed to the changes which the food given to children underwent, and to the excessive mortality among them, he instituted a series of investigations in a number of cases of death, with special reference to the state of the contents of the bowels. He was struck with the uniform similarity, a jelly-like substance being present in the bowels, and in some instances lining both the small and great intestines. This was subjected to the test of the tincture of iodine, which produced an intensely blue color, thus proving it to be starch.

Here we have a direct proof of the deficiency of the digesting power; the articles given for food had passed through the length of the intestines, and had undergone very little change, and could only act as foreign and irritating substances. The almost entire suspension of the digestive process might indeed have occurred upon the use of any description of food; but when it is considered that a sudden change is usually attended with injury even in the adult; that vegetable substances are, under ordinary circumstances, more difficult to digest than animal; that the natural food of the infant is entirely dissimilar in its nature to what was at once substituted in the instances above mentioned; we might very reasonably expect to find a suspension of the digestive powers, a very serious aggravation of disease, and the results already stated.

From all the facts here given it appears to be the most rational course to pursue to preserve as much simplicity in the diet as the nature of the case and attending circumstances will admit. If in health, when the digestion is unimpaired, as we have seen, food of an animal nature is the proper kind for the infant—in disease there can scarcely be any alteration to food of an entirely different kind without incurring some risk. It is not my intention to assert that no alteration whatever is to be adopted, and because but one kind of food is provided for the infant, that it would be hazardous to depart from it under any circumstances; such a course would be to discard all sound theory, to abandon all attempts at controlling disease, and if fully carried out would reach even to the administration of medicine itself. While we avail ourselves of the plain suggestions of science and the accumulated experience of ages, let us so adapt them to the peculiar condition of a class of individuals as not to do a positive injury by their injudicious and indiscriminate application. The aged, the robust, the toil-worn laborer, the inhabitant of the city or of the country, the delicate female and the tender infant, all demand some modification in the application of the same universally admitted principles of medicine. In the case of infants we can, without removing them entirely from the breast, avail ourselves of the mild and unirritative effects of substances of the same nature as that upon which the infant feeds. One principal reason given for the adoption of vegetable mucilage, such as infusion of flaxseed, arrow-root, etc., is that it is a soft and soothing application to the tender and inflamed mucous membrane. Now if the same object can be attained by any substance that possesses the same bland qualities, and is also of the same nature as the infant's food, there will be no necessity for resorting to substances, possessing such highly undigestible qualities as those of a vegetable nature. It is not that we

may alter the diet from the compound aliment, milk; but to select from some simple alimentary substances, which it is deemed advisable to employ as medicinal agents, that which, from its essential composition, will be found more nearly allied to the nourishment which nature so abundantly supplies, and thus do no violence to the physical constitution.

Such an article is found in certain animal tissues which yield gelatine; a substance which, it is well known, is soluble in water, and forms with it a jelly. There are different species of gelatine obtained from different parts of the animal, differing somewhat from each other, but agreeing in their general character. The gelatinous solution which constitutes a considerable portion of soups, hashes, and stews, is by no means easy of digestion, having been altered in its character by a high degree of heat, and being combined with other articles which make it very difficult of assimilation. But this is not the case with the purest gelatinous food, such as calf's-foot jelly or jelly made from isinglass. These articles rarely disagree with the stomach of the most fastidious dyspeptic, if they are good and fresh prepared; and where there is any inflammation of the mucous membrane of the stomach, when arrow-root and other vegetable jellies produce pain and flatulency, I have found this animal jelly to remain and be perfectly digested. The experiments of Beaumont show that calf's-foot jelly is easily digested, and disposed of in a very short time, and his opinion is, that "gelatine, if not in too concrete a state, is a very digestible article of diet."

There have been some very exaggerated views taken of the nutritive powers of gelatine, and attempts have been made to furnish food exclusively from gelatine prepared from bones, and the utter failure to accomplish the object desired may be regarded as opposed to Beaumont's statements; but the same objection will also lie against the use of fibrine and albumen when used alone, for, according to the report made to the Academy of Sciences by Magendie, "gelatine, albumen, and fibrine, taken repeatedly, nourish animals for a very limited period only, and in an incomplete manner." The object in giving gelatinous food to infants is not to supply an amount of nourishing matter, but to present to the surface of the stomach something which is in accordance with the demands of nature, and which, instead of exciting that organ to expel it as an unsuitable substance, will promote a healthy action in it, by being speedily digested.

In the adult, Liebig remarks, "the intensity of the vital force, its power to produce metamorphoses must be diminished as well in the stomach as in all other parts of the body. In this condition the uniform experience of practical physicians shows that gelatinous matters in a dissolved state exercise a most decided influence on the state of the health." Now, in the sick infant, the powers of the stomach to produce a change in the food must be much more diminished, inasmuch as the stomach, at that period, participates more quickly than any other part of the body in the derangements of the vital force; hence the difficulty of digesting vegetable substances.

Nitrogen is a very important constituent in the food of all young animals; it is, indeed, essential to the growth of the body, composing, as it does, a necessary part of the organized, living portion of the system. Nitrogen is supplied in great abundance by nature, at the earliest period of life; it is an ingredient in that part of the egg which the young chick makes its food, and of the caseine of the milk, which, we have seen,

forms the aliment of the infant under every condition of life. The articles so frequently resorted to of a sudden, in disease, such as arrow-root and similar amylaceous substances, contain no nitrogen whatever; and it must be evident, without entering into any discussion of the full effects of nitrogenized and non-nitrogenized food, that so great a departure from the plain provision of nature cannot be free from harm; the stomach being, from the demands of the system, only in a condition to receive food essentially different in its composition. The proportion of nitrogen in the caseine of milk, is 15.724 per cent.; in the albumen of the egg, 15.920; and in isinglass, 18.790 per cent. We see, therefore, that the existence of an important ingredient renders the last-mentioned substance peculiarly suitable to the requirements of the body, and on that account we would suppose that it is more easily digested.

The most convenient method of obtaining animal jelly is by using isinglass, which contains from 75 to 90 per cent. of gelatine, and its use will be the best method of fulfilling one of the most prominent indications in the treatment of disordered bowels in infants.

For some years past, it has been my practice to recommend a thin mucilage or jelly made from isinglass in the treatment of the affections referred to, when soothing and unirritating food is indicated, in preference to the use of arrow-root, and with so much uniform advantage, that I have been fully satisfied of its peculiar adaptation to the condition of infants. To give instances, would be to detail almost every case I have been called to attend. It rarely happens that acidity and other evidences of imperfect digestion, arise to any great extent when this is used; and from the appearances of the alvine discharges, it would seem that it was completely digested. Since the adoption of this species of diet, I have not had an opportunity of applying any test to detect the presence of undigested starch in the evacuations from imperfectly digested food—for, such are the decided benefits which have resulted from the use of animal jelly, in cases of inflamed mucous membrane of the stomach and bowels, that nothing could induce me to substitute anything for it, merely to prove the fact:—it would, however, be a remarkable, but not an unexpected corroboration of the views here stated, if the jelly-like appearance of the alvine discharges presented the same results on applying the chemical test of starch, as appeared in the anatomical investigations at the Parisian hospitals above mentioned.

It has been long the practice to administer to young infants when laboring under that distressing scourge, cholera infantum—when prostrated by debility and attenuated by protracted suffering,—various stimulating articles of an animal nature, such as the juice of clams and oysters, chicken water, or a piece of broiled ham, from repeatedly witnessing their beneficial effects. It is surprising with what avidity the little sufferer will seize and relish a piece of fat pork, when every other species of food is rejected. This instinct, experience teaches us may be gratified not only with safety but with actual benefit to the child; and some of our distinguished fathers in the profession have urged the use of such substances as a very efficacious remedy; and any one who has been a careful observer of the disease, in its most aggravated form, and has yielded to this instinct of the child, must bear testimony to the correctness of the practice.

I know how common it is to refer to experience in support of a favorite course of practice, and to rely upon this as an answer to all

objections; and the want of confidence, arising from the frequent failures of others who resort to a similar course, which too often occurs, leads to some distrust in such assertions. On all subjects connected with physical science, there are two species of experience on which we rely as guides in our attempts to control or direct the operations of physical laws: the one may be denominated an imperfect or partial experience; it is that which comes from repeatedly witnessing merely the results of the operation of certain unknown causes, or if these are known, the knowledge is so imperfect and obscure, that it is of little avail for practical purposes; the other, from the results being more or less clearly traced to their proper causes, may be aptly termed perfect, or rather enlightened experience. The former imparts but superficial knowledge, and is an unsafe guide, being liable to produce great errors when generally applied; the latter is capable of universal application from the ability which is afforded for discrimination, and thus enabling us to make exceptions which it would otherwise not be in our power to do. The experience in reference to the adoption of the course of diet here recommended, is of the latter kind; in which the results are precisely what we would be led to expect, and the physiological observations on the nature of diet here recommended find their corroboration in the effects they produce. The union of physiological principles and clinical observation is the true ground upon which to erect a suitable structure of experience in medicine. It is this species of knowledge, the result of a proper combination of well established principles with the investigation of the phenomena of disease, and their enlightened adaptation to the various circumstances which should modify their application, that constitutes the experience that can be made useful in practice. Any other species of experience, having no foundation in solid principles, can only lead to error when adopted as a guide by the practical physician.

PART SECOND.

Critical Analysis.

ART. VIII.—*Traité des Maladies de Plomb ou Saturnines.* Par L. TANQUEREL DES PLANCHES, Docteur de la Faculté de Medicine de Paris. Paris: 1839. Tomes II. 8vo., pp. 550, 552.

A Treatise on Diseases produced by Lead. By L. TANQUEREL DES PLANCHES, Doctor of the Faculty of Medicine of Paris. Paris: 1839.

(Continued from page 233.)

THE next variety of lead disease is paralysis, which is the loss, partial or total, of the power of voluntary motion, and of sensibility, or of one of them; the loss of the power of voluntary motion being occasioned by loss of contractibility in the muscular fibres. This may or may not be accompanied by loss of sensibility. The sensibility of the parts affected with paralysis may be lost, but is more frequently augmented. When the sensibility is retained, Des Planches denominates the affection, for the sake of distinction, paralysis of motion, or simply, lead or saturnine paralysis. When the sensibility is lost, he denominates it saturnine *anesthesie*. This distinction it is important to keep in view, as these two varieties of lead paralysis may exist wholy independent of each other.

Lead paralysis, then, is characterized by loss of voluntary motion, owing to the want of contractility in the muscular fibres of the organs attached. Most frequently the muscles which are thus deprived of motion are the extensors, not flexors; the pain, as we have said, when it exists, being more generally in the flexors, and in the inside of the joints.

Meander is the first author who speaks of the paralytic effects of preparations of lead. After him, Dioscorides, Galen, Paul of Ægina, Rhases, and Haly-Abbas, have mentioned paralysis in describing the different accidents occasioned by the introduction of lead into the stomach. Paul mentions the fact that it is sometimes accompanied with loss of sensibility, and sometimes not.

From the twelfth century, in which Avicenna lived, to Ferrel, in the sixteenth, we find few notices of this form of lead disease. Ferrel reports the case of a painter who was attacked with colic and with trembling, followed by paralysis. Charles Lepois affirms that a portion of those attacked with colic, which he has described with so much precision, were affected with paralysis in the arms, and other forms of lead malady. Engalenus also cites examples of colic followed by paralysis. Cetois, in the seventeenth century, speaks of the colic of Poiton as followed, when not cured, by paralysis, preceded, for the most part, by epileptic convulsions.

Stockhusen was the first who attempted to point out the particular muscles of the arms most frequently affected, and speaks of the extensors as more frequently losing the power of motion than the flexors. Other writers followed, to the end of the century, but added little or nothing to the knowledge already possessed on the subject. In the eighteenth century Ramazzini, in a work on the diseases to which artisans are subject, speaks of lead colic, when neglected, or not properly treated, as resulting in paralysis of the upper limbs. This, he says, is seldom complete. More frequently the power of motion is only enfeebled. If it is lost, sensation remains. It may be partial in a particular member; thus one hand, or one finger, may be attacked. It is ordinarily preceded by abdominal pains, but sometimes it is primitive.

Something, too, may be collected from Boerhaave, Huxham, and above all, from Dehaen, who, better than all other writers, ancient or modern, has described the paralytic effects of lead, and especially the particular muscles most frequently affected. Bonté has some valuable observations also on the subject. The paralyzed arms, he says, hang alongside the body, the wrists become pendant, the hands swell, and the fingers remain bent. He states several other particulars. More cases are reported by others, some of which Des Planches quotes. He concludes his historical analysis, however, with the reflection that paralysis caused by lead, has been very little studied. Certainly, says he, authors, ancient and modern, have not given to this species of paralysis an attention proportionate to its importance, but have treated it in a manner by far too superficial. We look in vain for anything complete on the subject. We are obliged to turn over a great number of works to collect a few notices of it, more or less incomplete. They are scattered here and there in books, especially those which treat of lead colic. This chasm in the history of saturnine maladies has been perceived and regretted, but nothing has been hitherto done to fill it.

Des Planches enters on this part of his subject with great zeal. The circumstances under which metallic paralysis manifests itself, he says, are very similar to those under which colic and arthralgy appear. It is lead only, or its compounds, which, introduced into the system in extremely minute particles, is capable of producing the affection here described. We are told every day, says he, that mercury produces paralysis. This is an error. Mercury produces only trembling, called the mercurial trembling, never paralysis. In fifty cases of mercurial tremblings, witnessed in the Hospital of Charity, not one of paralysis was observed. Nor do the other metals give birth to it, but lead only. Des Planches assures us that he had visited many apartments in which persons labored in mercury, copper, tin, arsenic, &c., without any mixture of lead, and on inquiry he found that the workmen were never attacked with paralysis, occasioned by these substances; and he has never found, he adds, in authors, a single fact, the result of rigorous observation, which contradicts what he here affirms. Lead only, of all the metals, possesses this unenviable distinction.

It has been supposed that preparations of lead might penetrate through the skin, so as to produce paralysis as well as other forms of saturnine malady. The result of Des Planches's observations and experiments is, that this cannot be, if the epidermis be preserved entire. If this be removed, or broken, paralysis as well as colic, results from topical applications of lead.

The common form, however, in which lead is introduced into the system, in cases in which it produces paralysis, is through the stomach and respiratory organs. The inhabitants of Amsterdam, while using water preserved in leaden cisterns, often found themselves affected with paralysis, as well as colic. It has been produced, too, in other cases, by the use of water which has been in contact with lead; by the use of wines and cider adulterated with litharge; by butter into which white lead had been introduced to increase its weight; and by the acetate of lead given in medicine.*

In the following table are given the occupations of 101 individuals affected with lead paralysis:

Manufacturers of white lead,	31	Laborers in type foundries,	4
" " minium,	6	Printers,	3
Painters of buildings,	22	Lapidaries,	3
" " carriages,	4	Cutters of crystals,	1
Ornamental painters,	5	Manufacturers of acetate of lead,	2
Grinders of colors,	6	" of sulphate of lead,	1
Manufacturers of German cards,	1	" of chromate of lead,	1
Potters,	5		
Refiners,	3	Total,	101
Plumbers,	3		

Another table is given indicating the length of time 102 individuals were exposed, before the development of paralysis:

Duration of Labor.	*Number Attacked.*	*Duration of Labor.*	*Number Attacked.*
Eight days,	3	Eleven years,	4
Fifteen days,	2	Twelve years,	2
Twenty-five days,	1	Thirteen years,	2
One month,	3	Fifteen years,	4
Forty-five days,	3	Sixteen years,	1
Two months,	2	Seventeen years,	1
One year,	8	Eighteen years,	4
Eighteen months,	10	Twenty years,	6
Two years,	4	Twenty-two years,	3
Three years,	8	Twenty-five years,	4
Four years,	6	Fifty-two years,	1
Six years,	6		
Seven years,	4	Total,	102
Ten years,	10		

* Des Planches has brought together several cases and referred to authorities for many more, in which colic and sometimes paralysis, have been produced by the internal administrations of preparations of lead. He gives one remarkable case. A single pill, containing one grain only of acetate of lead, taken by an individual, a student in medicine, produced colic; a second pill taken next day, was attended with effects more serious; and a repetition of the pill the third day, produced consequences so alarming that the apothecary, who had prepared the pills, was accused of negligence. The pills being analysed, however, it was found that such was not the case, for a single grain only of acetate of lead was detected in each. This, however, is a very extraordinary instance. Much larger quantities, as all know, are frequently given without being followed by similar effects. In former times preparations of lead, Des Planches says, were given more frequently than now. He is convinced, however, that at the present day, injurious effects follow the administration of them oftener than is generally supposed, from the circumstance that attention is not particularly directed to the subject. Symptoms of derangement in the system, occasioned by these preparations, are not looked for, and, if witnessed, may be attributed to the disease which the medicine is intended to combat.

Paralysis sometimes precedes colic. Of the above 102, fourteen were of this number. Sometimes colic disappears, and paralysis supervenes. Colic neglected, or improperly treated, is peculiarly liable to terminate in paralysis. But violent colic, as before observed, is not oftener followed by paralysis than moderate or light. Many persons attacked with violent colic, escape paralysis; while others attacked with light or moderate, are uniformly, at the same time, affected with paralysis.

Lead paralysis, therefore, the author infers, is a malady distinct from colic, and is a direct effect on the introduction of lead into the system. The predisposing causes of this paralysis are, in a great measure, unknown. Are they peculiarity of constitution? One would imagine that persons naturally feeble, and of a nervous temperament, would be more frequently attacked than others. But facts prove that they are not. Persons of a sanguine temperament are attacked, and so are the lymphatic and nervous, and those of a delicate and feeble constitution; there seems to be little or no difference in frequency. Some are not once attacked through the whole of life, while others, apparently of the same temperament and constitution, are attacked many times. Of the 102 cases mentioned above, 40 were of a vigorous constitution, 35 of a feeble, and 27 of a medium. It is more difficult to pronounce on temperaments than on strength or feebleness of constitution.

Has the age of an individual anything to do with the development of lead paralysis? The ages of the 102 were as follows:

Below 20 years, . . .	2	Between 40 and 50, . . .	28
Between 20 and 30, . . .	24	" 50 and 60, . . .	8
" 30 and 40, . . .	36	" 60 and 70, . . .	4

Has the season or state of the atmosphere any influence in the development of paralysis? Of the 102 cases under notice, 36 occurred in summer, 28 in spring, 26 in autumn, and 12 in winter. But as before remarked, some allowance must be made for the fact that fewer individuals are employed in occupations in which lead is used, in winter than in summer. After all, we are forced to conclude that there must be, in some individuals, a susceptibility to the influence of lead rather than in others, though the physiological causes which determine it, are hidden in impenetrable obscurity.

When paralysis is not preceded by other forms of lead maladies, there are certain symptoms which usually give notice of its approach, as a sensation of lassitude, weight, and perhaps coldness, a kind of numbness accompanied with debility, an unusual stupor, and inaptitude in motion in the parts threatened with attack, attended frequently with a trembling more or less marked. Sometimes the instruments employed in labor drop from the hands from want of power to retain them. These and similar symptoms often disappear when the individual becomes warmed with work, but return during the night, and are quite perceptible in the morning. Occasionally they cease without paralysis, but are more frequently its precursor.

In the greater number of cases, however, the paralysis is preceded by other forms of saturnine disease. In a few instances, it occurs without any premonitory symptoms whatever.

From the precursors of the disease, we pass to the disease itself—lead paralysis. It has been thought that motion in the paralysed muscles is

only partially, not totally destroyed, because it seems to execute some obscure and uncertain motions. This mistake is easily explained, for as paralysis of lead usually occupies only one or more muscles, or set of muscles, the other muscles of the limb, which are not paralyzed, must necessarily impress upon it certain motions. The limbs of which particular muscles are paralyzed, will execute these motions in consequence of the contractility of the sound muscles, but the motions will be incomplete, because, for exerting them fully, the action of the paralyzed muscle is necessary. There is, therefore, a diminution of the general power of the limb, and a complete loss of motion in certain muscles—two circumstances which must be carefully distinguished.

The only means of ascertaining precisely how far the power of motion is impaired is an exact analysis of the movements which are lost and those which are preserved in the limb affected with paralysis. In this way, it is readily determined which muscles have lost and which preserve their contractility. From want of attention to this point, much confusion and many mistakes appear in the descriptions and statements of writers who have touched on this subject.

All the muscles of the limb may be paralyzed, but this is very rarely the case. The paralysis is far more frequently only partial. Occasionally, in protracted cases of saturnine malady, when the patient is reduced to the last stage of debility, and all motion is lost, the immobility may arise from the general prostration of the subject, and not from direct action of the lead. Cases of this kind, however, may in general be readily distinguished from others.

In the 102 cases already repeatedly mentioned, loss of motion was general in the upper extremities in five instances, and in the lower, in one. In all the other cases it was partial, limited to one muscle, or system of muscles.

Except in cases of general paralysis, it is always the posterior part of the upper limbs, and the anterior part of the lower, which are paralyzed. This preference of lead for the extensor muscles, it is impossible, in the present state of science, to explain.

Sometimes the paralysis exists in the same degree in the two opposite limbs and in the same muscles; sometimes in different degrees and in different muscles, and sometimes it seizes one limb, while that of the opposite side remains sound.

The sensibility of the muscles paralyzed usually remains, and is often augmented. Out of the 102 cases, it was lost in only five. In six of the 102 cases, blindness and deafness occurred. The pulse is usually feeble, soft and slow; irregular, if the paralysis has continued a long time. In this case, the paralyzed limbs become nearly emaciated, and exhibit a peculiarly unhealthy appearance. In severe and long protracted cases, the whole appearance of the victim is wretched in the extreme. When he can drag himself from place to place, he appears more like a dead man walking than like a living being.

Of the varieties of lead paralysis the author treats at considerable length, entering into detail and stating the particular motions which the sufferer can, and those which he cannot, perform, as one or another muscle is affected. But the limits to which we must confine ourselves will not justify us in minutely following him, though, to those who are desirous of making themselves thoroughly acquainted

with the subject, this part of the work will be found exceedingly interesting.

This is the most unfrequent of all forms of disease occasioned by lead, but the most alarming. To this subject the author devotes two hundred and thirty pages. We can give only a few of the results of his observations.

Preparations of lead introduced into the system may directly affect the brain, and the result may be delirium, coma, convulsions, accompanied or not with the loss of one or more of the external senses. It is marked, therefore, by either the loss or exaltation of the sensibility, general or special. Similar symptoms may attend diseases of the brain, which originate in other causes, but when occasioned by lead they have a peculiar physiognomy which distinguishes them from all others.

The effect of preparations of lead in producing delirium was known to the ancients. Dioscorides mentions it. Aristæus speaks of epilepsy as resulting from the same cause; and Paul of Ægina says that it is sometimes produced by the internal use of preparations of lead. Other writers, ancient and modern, recognize tremors, convulsions, vertigo, general stupor, epilepsy, apoplexy, delirium, coma, as among the effects of lead. The symptoms in animals are the same as in man. Dogs, arrived at the last period of the malady, remain extended in a state of insensibility, or bite and tear every living animal which approaches them, and even the earth on which they lie, when no longer able to stand.

Des Planches had opportunities of observing seventy-two cases of encephalopathy. Of these, twenty-five were manufacturers of white lead; five, of minium; twenty were painters of buildings; three grinders of colors; three manufacturers of cards and painted paper; two potters; two refiners; three plumbers; one worker in tin; two laborers in type-foundries; seven lapidaries; two manufacturers of shot; and one a printer. Of these, ten were attacked after laboring between a period of eight and of thirty days; thirty-four labored between one and nine months before being attacked; and twenty-one labored for different periods from one to fifty-two years. Four of them were under twenty years of age; twenty, between twenty and thirty; thirty, between thirty and forty; twelve, between forty and fifty; five, between fifty and sixty; and one, between sixty and seventy.

The attack on the brain is not always preceded by colic, arthralgy, or paralysis, but more frequently it is preceded or accompanied by one or more, and sometimes all of them. No cause can be discovered in the age, constitution, habits, circumstances of exposure, or any other circumstances connected with the individual, why the disease should take one or another form. One would suppose that persons of a delicate constitution and nervous and irritable temperament, would be more subject than others to a cerebral attack from the effects of lead. But facts do not confirm this supposition. The seasons appear to have no manifest influence over the development of this form of saturnine malady. The attack is sometimes sudden, and arrests the laborer in the midst of his occupations, or it may be announced by various troubles in the head.

The variableness of the symptoms is one of the marked characteristics of cerebral affection occasioned by lead. Sometimes one form of the disease continues throughout: at other times, different forms succeed each other, and group themselves in various ways, exhibiting, seemingly,

all possible transitions and combinations. Delirium may be greater or less; partial or general; continued or remittent, or even intermittent; tranquil or furious. The expression of the countenance is most diverse and capricious, of which the patient appears totally unconscious. Aberrations of mind are no less capricious and varied. In truth, the access and progress of the disease, and everything about it, are marked by an inconceivable irregularity.

Laborers in lead are sometimes attacked with coma suddenly, when apparently in perfect health. But convulsions constitute the most frequent form of cerebral affection occasioned by lead. These are of various characters, partial, or general; more frequently they appear in the form of epilepsy; often, epilepsy followed by coma or delirium. Delirium, coma and convulsions frequently in a manner blend, and produce various combinations. Catalepsy, too, occasionally occurs.

Of Des Planches' seventy-two cases, sixteen died and fifty-six were cured. Of cases reported by others, sixty-one died out of eighty-nine. It has been generally supposed, that death is the rule, and recovery the exception. Des Planches, it appears from the above stated result, has met with better success than some others. Probably, however, the cases reported by others were in general only the worst cases. Des Planches' list of seventy-two includes all which fell under his notice, whether light or severe. He gives various modes of treatment employed by others and by himself. He decidedly condemns bleeding, and is not in favor of opium. He is clearly of opinion that the expectant method is the most successful, the foundation of which is diet and diluted drinks. Energetic treatment fatigues and exhausts the patient, without benefiting him; often greatly injuring him. The author gives thirty-one cases, with the mode of treatment, and the result.

Some remarks follow, on the means to be employed by those who work in lead, or in the arts in which it is used, for preserving themselves from its deleterious effects. The public mind was strongly moved by the representations of their sufferings, which were made a few years ago, and the result was, different scientific bodies were addressed, and the author of the volumes now under notice in particular, was requested to inquire what preservative could be found. For this purpose, he opened an extensive correspondence with artists and others employed in lead and its various preparations, often visited their establishments, and may be said, in truth, as he tells us, to have lived among the laborers. He has thus been able to collect many important facts and suggest many rules, the observance of which will give partial security. That is all which can be given to laborers in lead and its preparations. The preventive means are ventilation; sponges applied to the mouth and nostrils; habits of cleanliness; cleaning the mouth and teeth with pulverized carbon; never to eat in the apartments where the work is carried on, for some were found both to cook and eat their food in them; to avoid all irregularity and excess; never to labor before breakfast in lead works; to use good and nourishing food, milk both for food and as an aliment, flesh, with the best vegetables, and a little wine or beer taken with food. These, with certain apparatus and defences of the person, and a particular mode of constructing furnaces, and other mechanical helps, are mentioned as diminishing the frequency of attack; but nothing, as we said, can give perfect security.

ART. IX.—*Natural History, Pathology and Treatment of the Epidemic Fever, at present prevailing in Edinburgh and other towns, illustrated by cases and dissections.* By JOHN ROSE CORMACK, M.D., Edin., F.R.S.E., &c., &c. London, J. Churchill, 1843. Pp. 182.

THE opportunities possessed by Dr. Cormack, of observing the disease described in the above named work, were derived from his physicianship to the New Fever Hospital at Edinburgh. He divides the disease into the moderately and the highly congestive forms of the disorder, and having taken accurate notes of the symptoms of each case, at every visit, at the bedside, and recorded the autopsic appearances in the anatomical theatre, he presents us with a most accurate account of the natural history and pathology of the affection. The latter is confined, however, wholly to cases of the second form of fever. Cases of the moderately congestive form of the disease were marked by a peculiar appearance of the countenance of the patient, which, for want of a better term, is designated by the epithet, *bronzed*. A cold, hot and sweating stage marked, with remarkable similarity of nature and order of occurrence, the invasion of the disease. Speaking of the "highly congestive" form of the disease, Dr. C. (p. 23) remarks, that "although many of the cases issuing in death, or characterized by extreme severity, present symptoms very different (from that of the milder form), there can be no doubt that *the disease is essentially the same, the difference being one only of degree*, as will be more especially unfolded hereafter. *Both forms* are, *undoubtedly, the result of the same morbid poison.*" "One of the most common symptoms in this latter form of the disease, *is yellowness of the conjunctiva, and of the whole surface of the body.*" "Associated with the yellowness, there is generally depression, less or more delirium, dusky and often porter colored urine, black melæna-like stools, and hæmorrhages from some of the mucous membranes. In the worst of the cases, *black coffee-ground-like matter is ejected from the stomach*, and passed per anum." In fact, these patients had, to all intents and purposes, *yellow fever*. "Yellowness and black vomit," says Dr. C., p. 89, "have, by most writers, been taken as characters of special disease; and we find remittent and continued fevers, when prevailing epidemically, each described under the designation of yellow fever. A very cursory, if judiciously directed, study of the literature of this disease, will convince any one, that the term "yellow fever" is applied to fevers differing essentially from one another in their character, constitution and mode of propagation." In a visit made some years ago to places where *the yellow fever* of Louis prevailed, Dr. C. never heard any diagnostic characters of that fever, excepting yellow skin and black vomit, "*consequences of congestion liable to occur in fevers of all types and countries.*" Christison, in his article on continued fever, contained in the Library of Medicine, mentions "disorder of the hepatic system, accompanied with *jaundice*," as an "important, though rare complication." "Some," he says, "have imagined this affection to be allied in nature to the yellow fever of hot countries, but with what justice it is not very easy to say." The facts contained in Dr. Cormack's book will assist in forming an opinion on this subject. Sporadic cases of yellow fever occurred in Paris after the hot summer of 1822, of a type decidedly typhoid. Dr. Stokes, in the article Enteritis, in the Cyclop., and Graves, in his Clin. Med., describe cases of yellow fever which they treated in the Meath

Hosp. of Dublin, *during the epidemic* of 1827. The latter remarks that "*there is not so much difference between the diseases of Ireland and warmer countries, as has been imagined.* They differ, it is true, as to their degrees, *but not as to their pathology*" (p. 215, lib. cit.). In fifteen cases, Dr. Graves could detect "*no difference in the symptoms which they presented, and those which characterize tropical yellow fevers.*" In both, he tells us, the seat of the disease is a violent inflammation of the mucous membrane of the stomach and duodenum, a fact asserted by Dr. Physick in our own country. "In the yellow cases of the fever now prevailing in Edinburgh," says Dr. Cormack, p. 92, "this same altered state of the gastro-intestinal mucous membrane is found," "and indeed," he says, also, p. 93, "the correspondence was complete between the symptoms of my cases and that considered by Dr. Graves common to the yellow cases which occurred in Dublin, in 1829, and to the yellow fevers of tropical climates." Dr. Cormack (p. 95) mentions instances to show that "in certain circumstances, traumatic fever assumes all the characters of yellow fever;" and quotes a passage from a clinical lecture by Dr. G. Ballingall as "valuable, because tending to establish a point which I am anxious to make out, viz., that yellow skin and black vomit are not *specific, but accidental characters of a fever*" (p. cit.). "When," says Dr. C., p. 96, "we see yellow fever suddenly breaking out in a ship far from land, and when there has been no communication during the voyage with any vessel or town where the fever was at the time, since leaving a healthy port, then we must look for *some other cause than contagion, or march miasma.*" This something is probably a putrid effluvium from the hold. "The most rational explanation of the yellowness," says Dr. C., "seems to be that it is the result either of an absorption of bile, or of its non-elimination from the blood;" "when we remember the disordered state of the secretions, and *the diseased condition of the blood*, it seems most natural to conclude that the bile has either not been secreted, or secreted in very small quantity," p. 98. The erroneousness of this conclusion is established by the fact that in many of the autopsies, the gall bladder and intestines contained the usual quantity of this fluid, though not of the healthiest kind. Secondly, the author directly afterwards adds, that the bite of a particular kind of viper, and the eating of certain kinds of poisonous fungi and fishes, cause the skin and secretions to become speedily yellow. "The primary effect," he very properly adds, "both of the poison of the yellow fever, and of the bite of the viper, seems to be upon the blood," p. 98, and it is to the changes produced in this fluid, in all cases, that we may with propriety ascribe the singular coloration which has given its name to the disease in question. Probably this too, with the *superabundance* of biliary discharges occurring in the so-called *bilious* remittents of our southern climate, has caused this epithet to be applied to them.

"So distinct," says Dr. C., notwithstanding variations in some of the phenomena of certain of the cases, "was the connecting link of cases between these groups, that it never occurred to me, nor to any else, I suppose, to consider that these variations constituted *two distinct fevers.* Arbitrary methods of classification, and the dressed up descriptions of systematic authors, make it appear to the cursory student, *that the fevers of tropical climates are different from those of this and other temperate climates;* whereas, were epidemics of different climates studied, as they actually occur, it would be found that fevers *differ as to their degree, but*

not as to their pathology"—(99). In Jamaica, intermittent fevers, common continued fevers, yellow fever, bilious remittent fever (arbitrarily, says Dr. C., separated from it) and synochus, are all prevalent, and "the cases styled remittent fevers might very often," says Dr. C., "with as much propriety, have been called yellow fever, and in the other classes difficulties would occur as to the distribution"—(100).

"The rosy elliptical eruption, resembling measles, was absent in almost every case," in the epidemic described by Dr. C. (103.) This assertion is afterwards qualified by the observation, "with some rare exceptions." "And further," in p. 105, it is said, "its *general* absence, and *occasional presence*, are both points of resemblance between it and the (typhus) epidemic of 1817–20, described by Dr. Walsh, and which, in all its leading features, *is identical with the present*." Let us only observe, in this place, that the lenticular eruption is not common in typhoid fevers of a high grade of intensity, and that in every milder case of such fevers they are not of necessity to be found. This fact, the absence of the typhoid eruption, leads Dr. C. to cite the remark of Dr. Alison, and with him to inquire, "whether this kind of fever has proceeded from the same poison as the usual typhoid fever of Edinburgh, *or is truly a separate disease*." Dr. Alison speaks doubtingly. Dr. C. evidently inclines to the opposite opinion. "This much," he says, "can at all events be stated, that *there is such a thing as persons being occasionally affected with the measly eruption, in addition to the usual symptoms of the present fever;* such persons, moreover, apparently getting the disease from a contagious poison, evolved from, or generated by persons congregated together, affected only with the prevailing form of the fever"—(106). Every one must see, at once, that it will not do to establish distinctive differences of diseases, upon such grounds as these. And so thinks the author. "When," says he, "I commenced the observation and the study of the present fever, and indeed for a considerable time afterwards, I regarded it as *essentially and totally* different from typhus; but recent circumstances, and more matured weighing of evidence, have greatly modified this opinion. As the season advances, all the cases have been more characterized by depression and general typhoid symptoms. The cases of continued fever, with and without measly eruption, are becoming more common in Edinburgh and in Glasgow"—(107). That the blood is diseased in this fever—that it is contagious—that it is communicable by fomites—are all shown by the author, and admitted.

Autopsies are published of eight cases, showing, 1st, abundance or even excess of bile and pervious state of the biliary ducts; 2d, more or less congestion of organs, with frequent extravasations. "These appearances are either identical," says Dr. C., "with, or analogous to, what the majority of observers have noticed and described, as being those which are found *in persons dying of yellow fever;*" and some of these authorities he cites, in proof of the assertion—(120). It is absolutely incredible, that in the present state of the question of Fever, *no allusion is made, in any dissection, to the state of Peyer's glands*—a fatal and unpardonable omission on every account! The sequelæ, treatment and statistics of the disease, we pass over, and sum up our notice of the work by saying, that it is a faithful and accurate history of the disease (though the morbid anatomy might have been given in fuller detail), and a valuable contribution to Pyretology.

But, before closing this notice, there are circumstances both of a

general and local interest, connected with the subject of fever, which induce us to revert to the facts contained in the volume before us. The first class of cases described by the author, present some peculiarities which indicate in the beginning extreme venous congestion, and in their progress bear a faint resemblance to intermittents of the "pernicious" kind. They are cases neither of true typhus, remittent, continued, or intermittent fevers; and if ever any form of simple fever has deserved the name of a distinct and different disease from any yet recorded, it is that which Dr. Cormack has described under the title of the "ordinary or moderately congestive form." Yet we find Dr. Cormack considering this and the highly congestive form as the same disease, and these the same disease as the ordinary continued fever, or typhus, of Edinburgh. Now, while this form of fever cannot be exactly likened to any one of the forms of fever generally described, continued, typhus, remittent, or intermittent, there are still points enough of resemblance between them, to establish the fact of their relationship, and to constitute them not distinct diseases, but varieties of the same. Thus, after the first forty-eight hours, "the tongue becomes dry, and longitudinally streaked on the centre with brown," &c. (p. 4); during the first four days the patients are in a state of dry ardent fever, with occasional sweatings. In some there is diarrhœa and dysentery (p. 5), debility (p. 7), lenticular spots (9), sudamina (18). Let us, then, noting particularly the fact that some very unusual phenomena occurred in this disease, agree with Dr. C. *in considering this as typhus*, varying in part only from the ordinary typhus of Edinburgh. Be it observed, in passing, that none died, save the very old.

We find, next, that the highly congestive form of the fever, a disease essentially the same, and the result of the same morbid poison, was attended by symptoms and lesions which differed in no perceptible degree *from those of the yellow fever of tropical climates*, and which forms of yellow fever are not uncommon either in Ireland or Scotland, and have occurred in France. We have the assertion of Dr. Graves that they differ in degree, but not as to their pathology! The same state of the stomach as found by Physick in Philadelphia, and the same condition of the liver as described by Louis at Gibraltar, existed in some of the cases related by Cormack (p. 124, line 4). There existed, then, in Edinburgh, in 1843, a true epidemic yellow fever, of endemic origin, *not the product of marsh miasma, infectious and contagious*, and this disease Dr. Cormack, no doubt correctly, considers as neither essentially nor totally distinct from the ordinary typhus of Edinburgh, which, in its turn, is the same as the typhus of England, France, Germany, and America.* Thus, then, *the typhus of these places, the mild and highly congestive form of the Edinburgh epidemic of* 1843, *and the yellow fever of tropical climates, are the same disease*, offering only certain un-essential differences in phenomena and in degree. Let us carry out this idea a little further. We have had, at different times, epidemics of yellow fever prevailing among ourselves, engendered—to use the language of Rush—in our own bowels. Such a form of fever is continually prevalent in the southern sections of our country, where it is called "bilious remittent." It has

* It will be recollected that we do not admit that typhus and the "typhoid affection," the more common form of fever in this country, are, as Gerhard, Bartlett, &c., maintain, different diseases.

even occurred within a year at a distance of a very few miles. Is our domestic yellow fever, is our southern and endemic bilious remittent fever, typhus fever? Are they all one and the same disease, differing in degree but not in pathology? Is it, indeed, the fact, that fevers do not differ specifically from each other? (Copland.) Let us interrogate facts: 1st, Typhus is infectio-contagious. 2nd, Yellow fever and bilious remittent are infectious only. 3rd, But the question of the non-contagiousness of yellow fever is not settled. 4th, If the highly congestive form of the Edinburgh epidemic is yellow fever, it *is* contagious. 5th, Bilious remittent cannot always be diagnosticated from yellow fever; *ergo*, if yellow fever be sometimes contagious, it may be so too; a single case of clearly proved contagion establishes, be it remembered, the contagious nature of a disease, though but one in a hundred thousand. 6th, The following passage is entitled, according to the able Editor of this Journal, to our fullest confidence: "The facts are numerous and indisputable, that the yellow fever has been communicated to individuals who have visited vessels, on board of which one or more persons have had that disease, *or which vessels came from a place where it prevailed*, and they have imbibed the infection not only while the cargoes were on board, *but after they were discharged and the vessels thoroughly cleansed*." See case of U. S. brig Enterprise, this Journal, for Nov., 1843. The circumstances mentioned in italics are instances of contagion by fomites, not of infection by malaria, which could no longer have existed, and, if correct, as cannot be doubted, entitle the yellow fever to rank among the contagious (infectio-contagious) diseases. And thus we see how, in certain cases, in the language of the report made to the Board of Health, from which we are quoting, "*the disease may come to us from abroad.*" 7th, Yellow fever and bilious remittent are of local and vegeto-miasmal origin. 8th, But, there are spreads of typhus of similar origin (Hudson); and, according to Cormack, Graves, &c., typhus and yellow fever are the same disease. 9th, There are other causes of "yellow" fevers than vegetable miasm; such a discoloration of the skin being not a specific, but an accidental character of a fever. 10th, The yellow color of the skin and secretions being an effect of a change wr ught primarily or secondarily in the blood, by the action upon it of a morbid poison, may occur in any case of fever, all being the result of some such intoxication, either vegetable or animal. 11th, A yellowness of the skin, conjunctiva and secretions, occurring in the course of a fever, does not necessarily confer upon it the epithet "bilious." 12th, If the typhus of Edinburgh and elsewhere, the "yellow" fever described by Cormack, which proceed from the same poison, and the "yellow fever" of the tropics, be the same disease, and not separate ones, there is another cause for "yellow fever" than marsh miasma, either a vegetable or an animal one; and whereas other fevers produced by this cause are contagious, the poison being multiplied, eliminated, and excreted, an argument, like causes producing like effects, is afforded for presuming the contagiousness of "yellow fever," although under favorable circumstances only in a slight degree. 13th, Yellow fever has broken out in vessels at sea, under circumstances which show that it must have originated on board such vessels, from local causes, as the formation of putrid miasmata in the hold, etc., and not from persons or places infected with the disorder. Typhus fever has many times had a similar limited origin. 14th, The cases of "yellow fever" which occurred sporadically

at Paris, in 1843, were of a type decidedly typhoid—the bilious fever of Rondout, in 1843, presented the same peculiarity; every continued fever tends naturally to this state, and never, if long continued, however simple in its commencement, fails to become so: if to these facts we add the consideration of the close resemblance between the typhus and "yellow" fever of Edinburgh and Ireland and the "yellow fever" of the tropics; that these and every essential fever must have a specific cause, whose action must be exerted either on the brain and nervous system, or upon the blood, inducing necessarily, according to the intensity of its action, a typhoid state; we see reason for concluding that all fevers not symptomatic are but different forms of the same disease, typhus, varying in minor points of symptomatology, etiology, and pathology, according to particular circumstances; species of the same great genus of the Febrile class. (See note on p. 183 of our Pyretological Inq., vol. ii., No. 5 of this Journal.) 15th, Several cases of the Edinburgh "yellow" fever presented the measly eruption of typhus, and as the disease continued, assumed more distinctly the typhous form; while cases of the common continued fever of the place became daily more numerous, showing that as the peculiar intensity of the morbid poison, to the action of which upon the blood the phenomena were owing, declined, by oft-repeated multiplication of itself and the influence of other causes, so the disease resumed its wonted aspect when originating from a less powerful morbific agent, and the malignant "yellow" typhus became the ordinary typhus, or the simple continued fever of the locality, a striking proof of "a difference in degree, but not in pathology." Such are the *pros* and *cons* upon the subject, and however little the reader may be disposed to accede to the correctness of the reasonings we have employed, we defy him to deny the accuracy of the facts upon which they are founded. "The truth is in the facts, and not in the mind that observes them." A few words, in conclusion, on a subject of controversy germane to this matter. It is known to every reader of this journal, that there prevailed at Rondout, Ulster county, in this State, in the months of August and September, 1843, an epidemico-endemic fever, an elaborate account of which is given in the 3d No. by the accomplished editor. This epidemic was supposed to be tropical yellow fever, and to have been imported from the West Indies, in the Schooner Vanda. The falsity of this latter idea Dr. Forry has ably demonstrated; but it still remains a disputed point, what was the disease which really did prevail there. By Drs. Forry, Vaché, Manly, and we believe every other observer but one, it is maintained that it was an indigenous, non-contagious, malignant remittent fever, with a great tendency to assume the typhoid type. By another physician, who had made the study of yellow fever the business of years, and had really had ample opportunities of observing it in the place of its nativity and prevalence, it is contended that the disease was really analogous to the "yellow fever" of the tropics. We have here opened the important and difficult question of the identity or non-identity of tropical yellow and American bilious remittent fevers, and secondarily of these with continued, typhus, or typhoid fevers. To respond to it, it would be necessary to enter at large into all the diagnostic marks which distinguish each, to compare the one with the other, and to draw, if practicable, the lines of discrimination between them. For this task we have, of course, neither space nor time, however strongly our inclinations may lead us to attempt to fulfil it according to the best of our ability; but, as a preface to a few remarks

bearing on the subject, we take leave to say that it would be one of extreme difficulty, even if feasible, and that probably it would be found that after all, the shades of difference are so few and faint, and those of resemblance so strong and many, as to make it no easy matter, in every case, to separate and classify them. Cases of what is termed "bilious influenza" had occurred at Rondout for some time previous to the arrival of the Vanda. Of one patient it is said that, as "early as June, he was attacked with the *bilious remitting form of* influenza, characterized by extreme yellowness of the skin and eye, with vomiting of a dark bilious matter, resembling what was subsequently designated as 'black vomit,' *and also by great vital depression.*" Influenza is a specific fever, of which catarrh is one of the attendants. It may embrace then, it seems, the phenomena of bilious remitting, yellow, and typhus fever, and be "influenza" still—another proof of the close connection between all forms of fever of specific origin. Of twenty-eight cases reported by Dr. Forry, as occurring at Rondout, about ten had yellowness of the skin and conjunctiva. Three of these cases we shall briefly analyze. "G. C., art. 33., attacked with fever Thursday 31. Sat.: More redness of eyes; *yellowness of the skin*, which is a new symptom in the case; constant change from better to worse, and *vice versâ;* great *prostration*. Sunday: Occasional *delirium*, gastric irritability, slight *epistaxis*, skin yellow, tongue moist and slightly furred, very red at tip and edges. Monday: Much prostrated—tongue same—occasional vomiting of dark fluid—*epistaxis*—*delirium*—skin lemon-colored—discharges of a dark fluid with shreds suspended in it—*hiccough*—*picking of the bed-clothes*, *hands tremulous*, *subsultus*. Died in four days. Dark bile and swallowed blood in stomach, *not* the peculiar black vomit of yellow fever. Muc. mem. of the stomach highly inflamed and softened. Liver and intestines natural." The reader will observe that the symptoms italicized occur in typhus, and in view of the other symptoms, we may inquire what would this disease have been called, if it had occurred at Gibraltar, during the visit of Louis, or at New Orleans in the sickly season? It is true that there were wanting the true black vomit and the pathognomonic state of the liver, insisted on by Louis; but we shall find that, in all epidemics (even in that which we are now considering), there exist cases of the prevailing malady in which some or other of the symptoms fail. "G. L., 35. No notes of first 3 days. On fifth day, suddenly prostrated. The countenance expressive of great languor and oppression; *delirium*, succeeded by manifest *stupor* and *deafness; the tongue dry*, *brown*, and *the teeth and gums encrusted with a dark*, *dry*, *and tenacious sordes*, and the chest marked with *vibices;* tongue protruded with great difficulty, tremulous, and not easily returned. Sixth day: Entirely listless, with stertorous breathing." This case, we do not hesitate to say, presents a full assemblage of every symptom of *pure malignant typhus*, having none of the yellowness of eye and skin, bilious vomiting, &c., characteristic of other cases of the epidemic; and here again we see the close alliance existing between these varied forms of disease, occurring in the same locality, in the course of the same epidemic. Under the same specific exciting influence, one man has typhus, another bilious remittent, with, in the language of the reporter, "a strong tendency to assume the typhoid type." Are these dissimilar or different diseases? "W. P. sixth day of fever. Skin hot, dry and yellowish; conjunctiva yellow, with vessels much injected; tongue covered with a dry, dark coat along the centre, with very

red tip and sides, much epigastric tenderness and gastric irritation." "Is this," says Dr. Forry, in a letter to Dr. Vaché, "yellow fever?" Let us contrast the symptoms thus detailed, with those mentioned by Louis, in his account of the Gibraltar epidemic of 1828 (Dunglison's Pract., p. 553, Rem. Fev. 3. *Yellow Fever.*) "Heat, not often intense, succeeded to the chills. Eyes red, glistening and suffused. Pain at the epigastrium, nausea and vomiting. To the injection of the integuments of the chest, there succeeded a slight yellow tint of the part, the eyes were of the same color, the color becoming rapidly brighter when occurring thirty-six or forty-eight hours before death." Thus far we have an identity of symptoms which could not have failed, had the case occurred under the observation of Louis, to have caused it to be considered as one of "yellow fever." Louis does not mention, or Dunglison quote, the state of the tongue. Dr. D. cites L. as saying that, in many severe cases which recovered, and in mild cases, *there was no yellowness* (524, 525). Case 24th related by Dr. Forry, after well marked symptoms of the *bilious* remittent fever then prevalent, having convalesced, sunk suddenly with something very like "the collapse of cholera," having rice-water discharges by the mouth and rectum, another proof of the close connection which exists between all classes of the pestilential epidemics. The last case contained in this excellent memoir, is that of E. F., who had from Friday 8th to Wednesday 13th, "simple continued fever," slightly remitting on Wednesday. On Thursday night she suddenly sunk and died. "This case," says Dr. F., "during life, had not one of the peculiar symptoms of the prevailing fever;" yet we find it developed under the same influences, occurring simultaneously with others of the truly bilious form, and terminating in the same rapidly and unexpectedly fatal manner, and cited as an instance of "the prevailing disease." In the case of a Mr. Beaver, also noticed, the characteristic symptoms of the prevailing fever ended in three or four days in a tertian ague. We have now sketchily indicated the close connection which exists between common typhus fever, yellow fever of the tropics, the highly congestive form of typhus of Edinburgh and Dublin, considered by Cormack and Graves to be analogous to it, and the bilious remittent fever which lately prevailed at Rondout, and perhaps we may say that of our own country, and must leave it to the reader to decide how far the connection justifies us in pronouncing them all to be modified forms of the same disease, or separate diseases. The very doubts which exist after the closest scrutiny, show the inherent difficulties of the subject, and we find Dr. Forry, at the close of his careful researches, observing "that inasmuch as it is easier to make a distinction of disease in theory than to realize it in some instances in practice, we would not quarrel with any one who should designate it an *indigenous and a non-contagious yellow fever*" (Jl. p. 335). Every *remittent* fever is of necessity a *continued* fever; the Germans, with great propriety, style it "*febris continua remittens.*" Armstrong makes one great genus, Typhus, of which Continued Typhus, Remittent Typhus, and Intermittent Typhus are species; and why not "Bilious" Typhus also? The great difference is in the cause of origin. Typhus originates from either animal or vegetable effluvia; intermittent, remittent, bilious, and yellow fever, and cholera infantum (which, says Dr. Hosack, App. to Thomas' Pract., is similar to the autumnal bilious remittent fever of adults), and spasmodic cholera chiefly from vegetable causes; but this has nothing to do with the symptoms which they exhibit. So numerous and so close

are the points of resemblance which they present, defying, as they often do, the delineation of a distinct line of separation; so often and so readily does the one form of disease run into and assume the character of the other, that, looking to their common origin and viewing the phenomena as the mere expression of its action on the economy, it is difficult, if not impossible, to deny to them a common nature, or to refuse our assent to the doctrine of Copland, "that all fevers are specifically the same." These are not novel and peculiar opinions: increased reflection, however, satisfies us more and more of their correctness, and every authority which we examine, adds to the number of their supporters. The opinion of Armstrong, "that intermittent, remittent, and continued fevers, arise from the same cause and are *the same disease*, with certain modifications;" and that of Watson, that "there is but one species of continued fever, although there are many varieties," we have elsewhere cited (note to the Pyretolog. Inq., p. 2d, this Journal for March, 1844, p. 282)., And in our essay on the Cholera Infantum, published in the Med. Gaz. vol. 1, No. 19, we quoted the following passage from Dr. Ed. Miller (dec.), "The cholera of infants forms one branch of a long stock of diseases, as much distinguished for the universality of their appearance, as for the diversified character they occasionally assume. Another form of them, more familiarly recognized by the public, is that of *remittent and intermittent fevers.* More comprehensive views of this subject have enlarged the number of them, by bringing back to their proper station many diseases, formerly so much disguised in external appearances, *as to conceal the fact of their radical relation.* And it will not be surprising, if this simplification should be carried much further, nor if our successors should group together a still larger assemblage of diseases, and demonstrate *their origin from one common cause.*" Prof. Rush tells us that in the yellow fever of 1803, in Philadelphia, the mild remittent, the inflammatory, bilious and malignant yellow fever, *in many instances ran into each other*"—and, in 1803, says Caldwell, "as the fever receded, its evanescent shades were in many instances much lighter than the common remittent of the country." In Baltimore, too, it was noticed, says Prof. Davidge, "that the bilious or remitting fever prevailed in its ordinary form, and continued until it was gradually lost in the severer forms of yellow fever as the season advanced." (Dunglison, Pract., vol. 1., p. 522.) Speaking of remittent fever, the author just named observes that, "It has been doubted whether continued fever should be received into our nosological arrangements; and with propriety, perhaps, all its forms might be considered under the head of Remittent Fever; for, if we carefully notice the cases that are classed under continued fever, we can scarcely fail to observe, that in some part of the day, the febrile symptoms are more severe than in others" (501). "The epidemic yellow fever of this and other countries has been referred to it, although upon this subject much difference of opinion exists, and they certainly appear to be, *anatomically*, different diseases" (501). The anatomical differences, as we have already shown, by our quotations from Cormack and Graves, are not so great as this passage would lead us to suppose. And we have further to remark, that whereas fever is an essential disease, and all the lesions met with, consequences of the action of the morbid poison and not causes of the fever, it is to the causes of fever and not to the particular lesion, which, in the fashionable parlance of the day, constitutes its "anatomical character," but which is neither necessary nor constant,

not less than to the general symptoms, that we are to look in establishing its nature. It is impossible, in the present state of our knowledge, to classify a disease by sole reference to its anatomical characters. But of this hereafter. "The common bilious fever of this country partakes, says Dr. Dunglison, "greatly of the continued fever;" and again, "Remittent fever, from being mild at the onset, may extend beyond the second week, and present functional phenomena characterized by great ataxia and adynamia:" "all the signs that characterize the typhoid state;" or, as he elsewhere says, "typhus fever." And again: "The more malignant forms of remittent, essentially congestive in their character, resemble greatly the pernicious Intermittents." We have offered these cursory observations, not to settle, but simply as items for consideration in the settlement of the interesting question of the Identity of all Fevers, and that of "Yellow Jack," with our Autumnal Bilious Remittents. Before we dismiss the subject, which our space forbids us much further to pursue, and from which, like the famous Messalina from her amorous enjoyments, "Lassati, non satiati, recessimus," let us examine, hastily, a work which, from the value of its contents and the manner of its execution, has the strongest claims to our respect and approbation: the "Hist. Diag. and Treat. of Typhoid and of Typhus Fever, with an Essay on the Diag. of Bilious Remittent and of Yellow Fever. By E. Bartlett, M.D., 1842."

From the recapitulation of the principal points of difference between typhus and the remittent fever, presented by the author, we shall select and consider the chief. 1st. In the mode of access, "which is *generally, but not always*" more sudden and more formally marked. 2d. The *uniform absence* of any characteristic cutaneous eruption. If the fever described by Dr. Cormack was not typhus, *it was* bilious remittent, varying in some respects from ordinary typhus; and we have seen, that although generally absent, "the rosy elliptical eruption, resembling measles," was *occasionally* present in it. This eruption, then, is not, as Dr. Bartlett says, "uniformly absent" in remittent fever. 3d. The frequent sallowness and yellowness of the skin. If, as Dr. Cormack supposes, the disease which he has described was typhus, yellowness of the skin does frequently occur in it. 4th. In the state of the mind and senses, which are *rarely* perverted or affected in any considerable degree. From a report of cases of remittent fever, treated in the New York Hospital, &c., by N. Shook, M. D. (N. Y. Jour. of Med. and Surg., No. 1), we make the following memoranda. Case 3d. Pulse 110 last night, with some delirium, but easily aroused and answers questions rationally. Case 4. The *stupor* changes to slight delirium in the evening. Case 5. Delirious in the night—stupor changes to delirium in the evening, during the exacerbation. Case 6. Stupor, but easily aroused. Case 7. Mind confused, at times delirium—delirious all night. Case 8. Muttering delirium. Case 11. Extreme prostration, *almost perfect coma*, answers no questions—lies upon his back, sordes about the teeth and gums—desires constantly to pick his lips and tongue—pulls the bed-clothes—high fever—subsultus tendinum at the wrist. There is no mention made of any yellowness of the skin, yet the case, says Dr. S., furnishes a fair example of at least one quarter of the patients that are admitted during the months of September and October, in the fevers contracted at the South. Whether this man had meteorism, is not mentioned. He had no petechiæ. What was this? Case 13. Muttering delirium—answers no questions—

cannot protrude the tongue—great prostration of strength—sordes—*tympanites*—*sudamina*—no *petechiæ*—no mention of yellowness. The stomach inflamed; duodenum and jejunum very much inflamed—glands of *Peyer scarcely visible*—those of Brunner prominent, not inflamed; liver hardened, *bright yellow color*, distinctly granulated and containing little blood—Spleen large and softened. The symptoms, as Dr. S. may well remark, "at the time of admission, *very much resembled those of typhus fever*, but the previous history of the case (he had been attacked *three weeks before*, on the passage from Savannah), and the more characteristic symptoms (?) sufficiently distinguish it from that disease." After reading this account of the state of the cerebral functions in severe cases of remittent fever, most of which symptoms are as severe as are ordinarily met with in the typhoid affection, we leave it to the reader to ssy whether Dr. Bartlett is justified in founding on the fourth peculiarity which we have quoted, a distinctive difference between typhus and remittent fevers, and would remark in passing, that this is not the only instance in which this distinction has been founded on grounds equally slight and untenable. 5th. In the state of the tongue, which is *usually moist*, and covered with a thick whitish or yellowish coat. We refer again to Dr. Shook's cases. Case 1. Tongue *dry*, and coated with a thick *brown* fur in the centre. Case 2. Tongue *entirely dry*, covered in the centre with a thick *brown* fur, red at the tip. Case 4. Tongue *dry* in the centre. Case 6. Tongue moist, coated with a *brown* fur. Case 7. Tongue clean, pointed and *dry* in the centre. Case 8. Tongue clean, *dry* and pointed, red at tip and edges. If the color of the fur of the tongue, and its dryness, or moisture, are to be considered important marks of difference between these two diseases, we beg to be allowed the benefit of the argument afforded by its condition in the above six cases. 9th. In the absence of sordes from the teeth and gums. In reference to this *very important* diagnostic difference, we beg to say that in case 8, related by Dr. Shook, who has very much neglected this point in his symptomatology of the disease, there were "*sordes about the teeth*, tongue dry and cracked, eyes glazed, muttering delirium, and vomiting of everything taken;" in case 11, *sordes* about the gums and tongue; in case 13, *sordes* about the teeth and gums, so that in three cases, the only ones in which it is noticed, this valuable sign of typhus *was* present in cases of remittent fever. 6th. In the great frequency of nausea and vomiting. We find this symptom alluded to as common in abdominal typhus, by Southwood Smith, and mentioned in seven cases; but we freely acknowledge its much greater frequency and violence in remittent and yellow fever than in typhus; nevertheless, in six of Shook's cases it did not occur, and in two of these, it is distinctly stated, that there was "no nausea or vomiting." 7th. In the fullness, tenderness and distress across the upper part of the abdomen. In eight of the twenty-eight cases of abdominal typhus detailed by S. Smith, pain in the epigastric region is especially noticed. On these two last items of the diagnosis then, nothing very positive, it appears to us, can be founded. We come now to differences more worthy of our notice, and of a sound philosophy. 8th. In the pathological alterations of the stomach, *liver* and spleen. To this and every argument drawn from morbid anatomy, in favor of the separate nature of particular fevers, we make an uniform answer; *these pathological alterations are not the causes of the fever.*

They are, as we have elsewhere taken great pains to demonstrate

(Pyret. Inq., No. 3), secondary consequences of the states of the blood and nervous system induced by the morbific cause. It is to this that we are to look as the essential cause, and if this be the same, then the fever, whatever be the symptomatic lesions with which it may be accompanied, even although sufficiently uniform to constitute its "anatomical character," is the same. Dysentery is always dysentery; small pox is always small pox, &c., because the specific virus always produces its specific effect; but the true *Febres*, being the result of animal or vegetable miasms, are the same diseases, the peculiar phenomena which they exhibit being due to peculiarities in the patient, the composition of the miasm and its modus operandi, &c., &c., which escape our explanation. But while we maintain the radical general similarity and identity of all the essential fevers, let it not be supposed that we refuse to acknowledge the reality and practical utility of those divisions which usage has sanctioned and established. The typhoid tendency, the general phenomena, and the cause being, as all admit, essentially similar in all *Fevers*, if it were found that in a particular form, say the bilious remittent, one lesion was invariably present and characteristic, it would, since it is only secondary, constitute after all only a mere difference of form and perhaps of degree, and not a total radical and essential difference and dissimilarity of nature. If hereafter a *variety* of small pox should appear, uniformly associated with a peculiar lesion, of the kidney for example, it would still be small pox and nothing else notwithstanding. And so of every essential fever.* But even this is not the fact with regard to the follicular lesion of typhus, frequent as it may be—nay, not even to the eruptions which characterize certain of the febrile class, and to which the intestinal eruption is analogous; nor with respect to that pathological lesion which Louis would make the anatomical character of the yellow, and Stewardson of the bilious fever. This latter lesion is, after all, *the only one* with which we have really anything to do, in considering remittent fever, though others have been mentioned, "for it is," says Dr. Stewardson, in his paper on the remittent fever, in Am. J. of Med. Sc. (undoubtedly the best pathological history of the disease which has ever appeared, and a perfect model of accurate and scientific observation, reporting, and reasoning), "the only one which is peculiar to the disease before us, all the other lesions being common to it and other diseases." It was found by Stewardson in every case; but in one of Dr. Shook's cases, which he considers as quite distinguishable from typhus, the liver did *not* present the peculiar appearance which Dr. Stewardson considers as characteristic; it was "hardened, of a *bright yellow* color, distinctly granulated, and containing very little blood." In another, "of a yellow color, hard, granulated, large and anæmious." In four of Dr. Cormack's cases, which were either yellow fever or bilious remittent, we find it stated in one that the "liver was natural;" ditto in a second; in a third, "liver firm, *dark colored*, turgid with blood;" in a fourth, "of a dirty, pale yellow." This last could hardly be the "bronze, between olive and grey," mentioned by Stewardson, but approaches nearer to the "fresh butter, straw, coffee, mustard, orange, or pistachio color" of Louis, in yellow fever. In the only post mortem examination made by Dr. Forry, in the fever of Rondout, which was either well marked

* Fevers are either symptomatic, or idiopathic (*essential*); of which latter, the *eruptive* fevers constitute one division.

bilious remittent or yellow fever, the "liver and spleen were in their natural condition." In two other cases reported in his paper, for which Dr. F. was indebted to the house physician of the N. Y. Hospital, in which they occurred, Dr. W. W. Jones, it is said that the liver in one had "rather a dark brownish red color," in the other was of an "orange yellow, rather dry when cut, and here and there somewhat rosy from minute vascular injection." The preceding quotations suffice to show, what is true of every lesion, we believe, in certain cases of all fevers, that no peculiar pathological state of the liver, &c., is constant and invariable in remittent fever, and can therefore be relied upon, which would not even suffice, to establish "differences, not of mere type, but of essential nature." (Stewardson.) This author fully recognizes the essential nature of fever. "In short," he says, "it seems to me that here (in remittent), as well as in typhoid and yellow fever, the characteristic anatomical lesions are to be regarded, like the pustules of small pox, *as consequences and not as causes* of the affections which they severally characterize, and that we must look for the latter in some morbid condition other than what is met with in the solid organs." To assign a special lesion as the cause of fever, is to disessentialize that disease; to remove it from the class of the pyrexiæ, and embrace it under another nosological head, according to the view which may be taken of the nature of the alteration. The argument then stands thus:

The cause of all idiopathic fevers being a morbid poison of miasmal origin (animal or vegetable), all fevers so originating must be considered as *essentially* the same disease, whatever *varieties* they may present, either of symptoms or of lesion, arising from the modified action of the same morbid cause upon the organs, through the medium of the hæmatosis or the innervation. Thus, then, the only real difference between typhus fever, intermittent, and the remittents of temperate and tropical climates, is in the fact of the vegeto-miasmal origin of the three latter, and the animal miasmatic origin of the former. But let it be remembered as a further connecting link, that typhus has had an origin distinctly paludal and vegeto-miasmal (Hudson). "The influence of locality," assigned by Professor Bartlett, as among the essential differences between typhus and typhoid fevers and remittents, *may* be explained by the effects of heat in decomposing certain vegetable products not met with elsewhere, and thus producing a peculiarity in the miasm, from which result particular effects upon the organism, a view which is supported by what is seen in typhus, the character of which is certainly modified by the pecularities of the miasmata by which it is engendered. That the functions of the liver may thus be affected in yellow and remittent fevers, as those of the intestinal follicles are in typhus and cholera, we will not attempt to deny, but that all the yellowness met with in those fevers is due to the influence of the bile in the secretions, we have previously shown to be susceptible of question. We have thus enumerated the "principal points" urged by Professor B., in attempting to establish the difference between typhus and typhoid fevers and remittent. Professor B. flatters himself that he has come to this task without prepossessions, and we do not doubt the sincerity of his intentions; but we do not think he has succeeded in avoiding the appearance of having written his book for the very and express purpose of establishing such differences, or in placing before the reader a fair and impartial statement of the arguments which may be advanced on *both* sides of the question. To the reader we must leave it to form

his own opinions, whether, or not, the statements now made by each, do anything more than establish the fact of fever existing under a multiplicity of forms, from a common cause. If we should be thought unwise in urging this distinction, one of the most interesting and natural which the consideration of the question suggests, we shall take refuge from the shafts of ridicule behind the ægis of Rush, against which our antagonists may launch them at their pleasure. "It is not," says he, "more improper to say that men are of a different species, because some are tall and others short, or because some are long and others short-lived, than that fevers are of different species, because they vary in their symptoms and duration." It is curious that Dr. B., who so strenuously maintains the radical difference between typhus and typhoid, and remittent fevers, should assert that intermittent, remittent, and congestive fever, are *the same* disease (350). One of the reasons is, that there is "a general correspondence in the symptoms of these *three forms* of disease." We do not hesitate to assert, that the general correspondence of symptoms is not near so strong between a simple intermittent and a bad bilious fever, as between this and typhus. There is a general correspondence of symptoms between all fevers (the eruptive are not included), because all are only *forms* of the same disease, originating from a similar cause, and must, of necessity, have symptoms in common. "There is," he adds, "no one symptom, or group of symptoms, which may not be present, *with certain modifications, perhaps*, in the others" (551). Since the publication of Cormack's cases, the same observation equally applies to typhus, yellow, and remittent fevers. "Another, and still more unequivocal proof," continues Professor B., "of the essential identity of these *three forms of fever*, consists in the fact, that they are severally *convertible into each other*" (353). Have we not shown the same to be true as respects common typhus, and the bilious fever of Edinburgh and Dublin? of the yellow fever of Philadelphia? Have we not given instances of cases occurring, during an epidemic, of bilious remittent, which presented none of the distinctive evidences of the prevailing distemper, but were simple fevers of the typhoid type? Speaking of these three forms of disease (intermittent, remittent, and congestive fever), he says, "all these differences, however, *are mere differences of form and variety;* none of them are constant and fundamental, and they are hardly greater or more striking than those which are continually seen in scarlatina, small-pox and other diseases" (354), and what is here said, in a limited sense, of these fevers *only*, we apply to all. "Furthermore, these three forms of fever seem to be alike dependant on the same essential producing cause." Now, until Dr. B. can establish, on stronger grounds than he has done, the supposed essential differences between all fevers of the continued type, we shall take leave to consider them all as arising from "the same essential producing cause," and consider them *all*, as he, on this, and other equally applicable grounds, has done his three, as "mere differences of form and variety." We have yet to learn in what respect the grounds of classification he has established, are less proper to the one variety than to the others. Dr. B., on reasoning not less vulnerable than that which has preceded, inclines to believe yellow fever an individual disease, distinct from remittent. But on this point he avoids committal. From typhus and typhoid fevers, he thinks the distinctions so numerous and striking, that an error of diagnosis cannot easily occur. The perusal of Dr. Cormack's cases rather invalidates the force of this asser-

tion. But both these gentlemen have labored zealously, usefully, and ably, in the cause of Pyretology, and have earned for themselves distinguished reputation, both at home and abroad, and while we honestly and respectfully differ from the latter in opinion, we highly recommend his well-written and valuable treatise to every physician, as, perhaps, the most useful which he can possess, and part from both with the expression of our high consideration.*

W. C. R.

ART. X.—*Principles of Pathology and Practice of Medicine.* By JOHN MACKINTOSH, M.D., fourth American from the last London edition, with notes and additions, by SAMUEL G. MORTON, M. D., Philadelphia, Lindsay and Blakiston. 1844, pp. 892.

THAT this volume should have passed to a fourth edition in this country, is a strong proof of its popularity. It is a most valuable epitome of medical practice, founded upon the most approved pathology, the state of which at the present day, it very accurately represents. No better book can be purchased by the student than this, which ranks with the excellent works of Graves, Armstrong and Watson, to which in style and arrangement it is closely allied. The author was a man of great learning, indefatigable zeal, and extensive practice. As a pathologist he was able, warm and enthusiastic. He writes agreeably, with clearness and vigour, and his book bears the marks at once of deep thought, close and correct observation, ample experience, and accurate knowledge of past and actual pathology. His treatment is energetic and judicious. Independent in the expression of his own sentiments, and confident in his own opinion, he is nevertheless candid, moderate and liberal. To his opponents he is sometimes severe, but generally just; to his friends affectionate, sympathizing and considerate; he differs honestly, censures not harshly, if decidedly, and he takes both pride and pleasure in awarding to all the praise which he conceives to be justly their due. Strictly conscientious himself, he loves truth and justice, and despises falsehood and unfairness. It is impossible to read the volume without being impressed favorably both with the moral and medical character of its gifted author, to whom, alas! censure or praise are now alike indifferent. The American editor, well-known as one of the savans of our sister city, in which professional character has attained to so proud an eminence, has added much valuable matter and filled up ably and usefully

* It would be possible to show that intermittent fever has had an animal miasmatic origin. The same is true of remittent fever (Dunglison). It is proved, also, by the cases which Cormack has published; and if we decide to consider them as analogous to yellow fever, we must acknowledge the same as true of it also. The disease observed by him was either typhus, yellow, or remittent fever, or all are one and the same. Its contagious nature demonstrates its animal, its epidemic origin, its vegetable miasmal source. And what is true of it under one appellation applies to all the others. Thus, all the forms of fever may be developed under the influence of the same causes, and are, therefore, specifically, the same disease. Q. E. D.

many hiatuses left in the original. To say that none yet remain or that some of the subjects are not susceptible of being given in fuller detail, and that some authorities are not neglected whose opinions merited notice, would be incorrect; but with even a few such deficiencies, the work is one of the most useful text books on the subject of which it treats, extant in our tongue, and should be in the hands of every student and on the shelves of every medical library. The mechanical execution of the book is excellent, but its size and weight and that of other analogous volumes, renders them difficult to be read in the hand. Cheapness in volumes of this size, outweighs convenience. Further eulogium on this favorite authority would be superfluous.

W. C. R.

ART. XI.—*Enchiridion Medicum; or, the Practice of Medicine; the result of fifty years' experience.* By C. W. HUFELAND, Counsellor of State, &c. &c. 2d edit. from the 6th German. Translated by C. BRUCHAUSEN, M. S. Revised for the proprietor by ROBT. NELSON, M. D. N. Y. WM. RADDE. 1844. Pp. 630. With an Essay on the Three Cardinal Means of the Art of Healing; by the same Author. P. 79.

THE name of its venerable and eminent author confers upon this volume a claim to our highest respect. It is the "depository" into which are cast the final results of the "long experience" of one of the most distinguished practitioners of a land famed for its erudition and the flourishing state of medical science within its bosom. There does not exist another volume on the practice of medicine, which comes before the public with a stronger right to be read, studied and relied upon. It is all that it is intended to be; "a complete, though compact manual, divested of all hypothesis; a clinical guide for the junior practitioner;" a guide to thought, to diagnosis, to the essentials of practice, to the treatment of disease. The publisher has rendered a most acceptable service to the profession, in presenting to them the experience of so celebrated a physician as Hufeland, and a volume of German practice, to which very few, except under its present form, could have access; and we earnestly hope he may be rewarded by the quick sale of the edition, for his commendable enterprise. It is much to be regretted that the study of the German language is so much neglected, and that the mass of the profession remain for ever in ignorance of the vast mines of practical utility and scientific erudition, concealed beneath its hieroglyphic characters and harsh-sounding phraseology. The volume before us supplies the hiatus as to the views and practice of our German medical brethren, and all would do well to possess it, not less on this account than on that of its intrinsic merit, and the value ofthe clinical teaching of the venerable, experienced and gifted Hufelan The first nineteen pages are devoted to a consideration of the relations of the physician to the sick, to the public and to colleagues, which abounds in just sentiments, couched in charming language, which, if duly attended to, cannot fail to benefit both the patient and the profession. Diagnostics and the cognition of the sick and of

disease, the order of the rational mode of healing, and maxims and general rules for physicians, concisely, but usefully and ably treated of, occupy the next sixty pages. Then follow the diseases, according to classes, each receiving a brief notice; none of which can be read without profit and advantage. There are peculiarities in the classification, which it is not worth while to point out, but which detract nothing from the practical remarks with which the history of each disease is accompanied; and, lastly, a collection of many formulæ, which, though savoring of polypharmacy, will be found to be admirably composed, and of immense value in the actual treatment of disease. The cardinal means of healing treated of concisely, but extensively, in reference to practice, are bleeding, opium and emetics, a class of remedies which are, evidently, great favorites with this experienced physician. This portion of the work is of the very highest practical value and importance. The whole style of this interesting and practically valuable, or we ought, perhaps, to say, *invaluable* volume, is eminently aphoristic. "Every fever," says Hufeland, "in the very same individual, can be transformed into all the different species of fever and exhibit them successively."—(79.) "Fever," he elsewhere says, "although essentially one and the same thing, assumes several modifications by the variety of the system from which it proceeds, or which it particularly attacks."—(81.)

To attempt to analyze a work so purely elementary, would be perhaps unnecessary, but it could not fail to be highly instructive. We are most disposed to complain of the cursory way in which many affections are treated of; as twelve lines only are devoted to "typhus icterodes," less than a page to cholera, one to peritonitis, seven to all the hydropes, and so on; but this is perhaps unavoidable in a mere manual. Many of the subjects, moreover, are treated of in sufficient detail, and really very little of what is actually known and valuable is omitted. We have said that there are peculiarities in the nosological arrangement with which we might be disposed to differ, and a sanguineness as to the recommendation of a good many remedies little used among us, about the efficacy of which we might be sceptical; a spirit of polypharmacy of which we disapprove, although the author's great experience, the result of the practice of half a century, entitles every recommendation of his to credit and respect; but still we consider the volume a very valuable and instructive one, the work of a learned and observant man; one from which much may be gained by study, or usefully to be consulted on an emergency. It is an excellent epitome of German theory and practice; remedies are copiously and somewhat hastily, nay, even incongruously, enumerated; but there are many formulæ given which, in obstinate cases, deserve a faithful trial, on such authority. It is well worth buying, studying, and consulting, and to lay to heart the facts, &c., which it contains, could not fail to make a humane, conscientious, honorable, well-informed, sagacious, ready and judicious physician. Eternal honor to the memory of the good old man, who teaches us to treat our colleagues with respect and indulgence; never to judge with severity, harshness, or contempt; or disclose faults, and try to raise ourselves by lowering others; who justly and beautifully says, "Oh that I were able to impress the minds of my brethren with this truism as forcibly as I am penetrated with it myself—He who degrades a colleague, degrades himself and his art;" who tells us that the most sublime vocation of man, after worship of the Deity, is that of being priest of the vital flame, and an administrator of the highest

Divine goods and the most secret powers of nature—physician! The physiatric an dgeneral maxims and medical ethics of a Hufeland deserve to be published separately, in a small compass, for the constant study and adoption of the profession, and from them also the public might gather many valuable hints, to be recollected and acted upon in that much dreaded hour,—

> "When fell Disease extends his giant hand,
> To stretch the suff'rer on a bed of pain;
> When Manhood yields, and Hope despairing flees,
> And Nature calls on Art for aid amain."

W. C. R.

ART. XII.—*Medical Communications of the Massachusetts Medical Society.* Vol. VII. Part III. Boston. 1844.

THE principal portion of this volume is occupied with the Annual Address, before the Society, by Dr. John Homans of Boston, on the character and qualifications of a Good Physician. The style and matter of the address are both excellent. The remaining portions are occupied by reports of Committees on subjects of local interest, tending, however, to show the useful objects to which the attention of the Society is directed.

J. A. S.

ART. XIII.—*A Treatise on Pathological Anatomy.* By CARL ROKITANSKI, M. D., Professor Extraordinary of Pathological Anatomy at the University of Vienna. Part I. Containing the abnormal conditions of the Organs of Respiration. Translated from the German, with additions on Diagnosis, from SCHOENLEIN, SKODA, and others, by Dr. JOHN C. PETERS. New York. WM. RADDE, 322 Broadway. 1845. pp. 164.

THE work now before us is the first specimen of German Pathological Anatomy that has been presented to the medical profession in America. The author appears before us as Professor Extraordinary in one of the most celebrated European Schools of Medicine, besides being connected, we believe, with the great Vienna Hospital, the largest in the world. His opportunities have enabled him to make, as we are informed in the preface, over twelve thousand post mortem examinations, a much greater number than has, or probably, ever will again fall to the lot of any pathological anatomist. Thus supposing Rokitanski to have been engaged for fifteen years in his pathological researches, he must have averaged more than two post mortem examinations a day, Sundays included! We may then very naturally ask, what else has Rokitanski done besides con-

ducting post mortem examinations? This is probably his occupation. He holds the position of Professor Extraordinary, a title which does not exist among us, but which we believe came very near existing a few years ago, in the organization of a Medical School in this city. The title corresponds very nearly with the French title *aggregè*, and is a regular appointment of the University, but the instructions given by those who hold it, are not the subject of examination, or considered essential to a degree in medicine. These professors are usually young men who aspire to a regular professorship, and who consider the advantages of being connected with a great medical school and hospital, and the practice of teaching such as choose to take advantage of their instructions, the best means of insuring their ultimate success. Such is the position of Rokitanski; he conducts the post mortem examinations of cases that have been treated by others, but does not himself take charge of, or even observe the cases during life. The course pursued, we believe, is as follows: the subject is brought to the autopsy room—the case is read, and the diagnosis formed during life, stated; the examination is then made, the professor pointing out the morbid appearances as they present themselves, and observing how far they correspond with, or differ from the opinions formed during life.

There are advantages and disadvantages in this system. There is likely to be more honesty of purpose. A clinical professor, who has given a decided diagnosis during life, and in the presence of a class of students, is very apt to smoothe over his mistakes at the post mortem examination. There is likely also to be more accuracy in the exhibition of what is actually known and well understood in the pathological changes that are found after death, for the observer is not apt to be led away by theory, and his opportunities for the careful observation of actual appearances are much increased. But on the other hand, no actual progress in pathological knowledge can be expected from such observers; they can point out accurately what is already known, but they cannot advance. He only can do this who joins the careful study of the symptoms and treatment during life with the appearance noticed after death. The real labor, the true talent is not in the dissecting room, but at the bedside; this is the foundation, that but the seal. It is this that renders the labors of Casswell so inferior to those of Cruveilhier, and which gives to the labors of Louis a superiority to which few in the annals of medicine have ever approached.

These opinions appear to us to be confirmed by reading the treatise of Rokitanski. Its merits are its simplicity, its conciseness, its honest and accurate descriptions, its absence of all speculation and pedantry. Its great fault is, that it is not a *book of progress*. What a noble work should we have had presented to us, had Rokitanski, with his twelve thousand post mortem examinations, added one quarter as much to our previous knowledge as Laennec did, who probably never made one tenth part as many!

We were surprised in reading a work coming from the most distinguished medical school in Germany, the country of Liebig and Müller, to find no allusion to the light which recent investigations in animal chemistry, and with the microscope, are calculated to throw on the elementary characters of morbid anatomical changes. We cannot suppose our author to have been ignorant of these matters; perhaps, and there is much reason in the opinion, he does not consider the conclusions which

have been already drawn from these sources, sufficiently established to be admitted into a work which is professedly made up of facts.

In expressing our opinion of Rokitanski's work, we would by no means be thought to have formed an unfavorable opinion of its merits. We prize it as an acquisition to our medical literature, and will say without hesitation, that as a work on pure pathological anatomy, it has not been surpassed by any that has yet appeared. The translator, sensible, no doubt, of its deficiencies in some of the important particulars to which we have alluded, has endeavored to supply them by many valuable and copious notes on the symptoms and diagnosis. We have never known this task better executed.

We have not been disposed to extend our notice of Rokitanski's work by the addition of many extracts from its pages. We will, however, conclude this notice by quoting the remarks on the "*Curative processes in Tubercles of the Lungs*," as one of the best portions of the book, and as illustrating the admirable manner in which the author unites clearness of description with conciseness, the best internal evidence of accurate original observation.

"Tubercular pulmonary consumption is doubtless *curable*, as may be inferred from not unfrequent appearances in the dead bodies of those who formerly had more or less suspicious affections of the chest, from which they recovered. We can only expect to arrive at a truly rational and certain method of treatment, by an investigation of the circumstances under which such spontaneous cures have taken place; and the consequences of such treatment will be the more beneficial, as it will be directed not merely against the abscesses in the lungs, but against the tuberculous dyscrasia also. Pulmonary consumption and tuberculous abscesses may only be cured after the general disease, and hence that process which lies at the foundation of its local effects, viz., the tubercles and abscesses, has been eradicated. Under such conditions it has been proven, by numerous incontrovertible facts, that tuberculous abscesses may heal, and in fact in several different ways.

"*a.* The reactive inflammation in the interstitial tissue around the caverns, deposits, as has already been remarked, a gelatinous infiltration, which obliterates the air-cells. This henceforth occasions a conversion of the collective adjacent parenchyma into a dense, fibro-cellular tissue of varying thickness. While this is taking place, the exudation which is deposited on the walls of the cavern by the same inflammatory process, changes into fibro-cellular tissue, and from thence becomes organized into a smooth serous membrane, which unites intimately with the former. The whole tuberculous abscess has now become transformed into a *cellulo-serous cavity*, from the internal surface of which a serous, sticky, synovia-like fluid is secreted. The bronchi which open into these cavities present a peculiar appearance, for the serous membrane which lines the sac, and the fibro-cellular tissue below it, become attached to the external sheath of the tubes, while the mucous membrane of the latter projects with a shreddy and somewhat inverted free edge into the cavity of the sac.

"But more commonly we find the abscesses lined with a *villous, cellulo-vascular*, more or less dark red, muco-membraneous-like layer, which is intimately adherent to the subjacent tissues. It appears to be in a constant state of irritation, and as it is usually found in caverns which communicate with large bronchial tubes, it would seem that its constant exposure to the influence of the air prevents its being converted into a smooth serous membrane. Doubtless an already formed serous lining may be again broken down by the irritation thus induced, into such a cellulo-vascular, muco-membranous-like tissue. It secretes a turbid, muco-serous fluid, and not unfrequently we find it covered with fresh exudations in consequence of higher degrees of irritation. In all probability these irritations, coupled with other causes, effect a gradual diminution and final closure of the caverns, in a manner subsequently to be described. In such caverns the

appearance of the bronchial opening is different from that already described, for the mucous membrane of the bronchus coalesces with the analogous tissue which lines the cavern, and both run into each other without visible lines of demarcation.

"At times plates of bones are developed beneath the serous lining of the caverns, in like manner as they are formed in the cellular tissue beneath healthy serous membranes.

"In such caverns an accident not unfrequently takes place, the like of which had not previously occurred, and which very often proves fatal at the outset. We allude to the *hemorrhages* which take place from abscesses thus constructed. They always spring from large permeable branches of the pulmonary arteries which traverse their walls, and are laid bare to some extent. These blood-vessels may open in two different ways:

"*a.* They either undergo an aneurismal dilatation, in consequence of an absence of support on the side turned towards the abscess, and finally give way at this place, without their tissues having undergone any other alteration of texture.

"*b.* Or the delicate cellular sheath of the vessel participates in the irritation which is going on in the adjacent lining membrane of the abscess; this extends to the fibrous coat, which becomes loosened, softened, and infiltrated with gelatine; then the vessel gives way, either with or without having suffered a previous dilatation of its coats.

"An occurrence deserving of attention sometimes attends these hemorrhages. The extravasation of blood into the cavern at times coagulates into a fibrous mass, which fills it completely, and is connected with a neck-like prolongation, which penetrates into the lacerated opening of the vessel, and is continuous upwards and downwards, with a cylindrical coagulum in the latter. The abscess may certainly close around this mass of fibrine, when the latter has become contracted and chalky; but as the abscess, in its previously described state, must be regarded as a simple non-malignant cavity in the lungs, which may heal in a safer and simpler way, this method of cure must be looked upon as an uncertain and dangerous one, except in cases where the abscess does not communicate with a bronchial tube. Hence, it is only so far of actual benefit as it affords a support to the vessels seated in the walls of the cavern, and thus prevents subsequent hemorrhages, which might occur before the abscess is healed by safer and more common processes.

"The already described cavern must be regarded as a healed tuberculous abscess, but the cure may progress further, viz., to perfect cicatrization, i. e.:

"*b.* If the abscess be not too large, it may close by a gradual approximation of its walls, which finally touch and unite with each other. We then find a cellulo-fibrous stripe in the place of the former cavern; the bronchi terminate in it in a blind cul de sac. This process takes place most frequently in the apices of the lungs, in which the presence of open abscesses, together with obsolete and chalky tubercles, sufficiently marks the nature of the process which has been going on. The obliteration of the cavern always occasions a degree of sinking in of the chest, proportionate to its size, and also a cicatrix-like puckering and contraction of the pleura; this is observed more plainly and frequently after the closure of the often quite superficial abscesses situated in the tops of the lungs. The thorax also sinks in, in a degree proportionate to the size and number of the closing abscesses, as may be inferred from the frequency of flattening or pit-like indentations in the sub-clavicular regions.

"The approximation and agglutination of the walls of the abscess may be essentially aided by various occurrences, among which belong the sinking in of the walls of the chest, the compression of the lungs by the diaphragm, from enlargement of the abdomen or some of its organs, the emphysematous dilatation of the parenchyma adjacent to the abscess, bronchial dilatation, &c. It has been proposed and attempted to produce one or the other of these conditions in artificial and sometimes forcible ways; we have given our opinion of the propriety of such attempts at cure in the first volume, and have pointed out the effects which they may produce.

"If the curative process sets in and proceeds very rapidly, the cicatrix may

enclose chalky concretions of various sizes, formed by the inspissation of a remnant of tubercular pus.

"*c.* The abscess may not cicatrize in the above described manner, but is filled up by a roundish or irregularly branched mass of fibro-cartilaginous tissue, in which the bronchi terminate, formed by the conversion of its cellulo-fibrous walls into a fibro-cartilaginous callus, which progressively becomes thicker and thicker. In such cases, a slight contraction only of the parenchyma ensues.

"This fibro-cartilaginous mass may be transformed, sooner or later, into a very compact bony concretion of corresponding size and shape.

"2. The second metamorphosis which pulmonary tubercles undergo, under favorable circumstances, is the very opposite of softening, viz., the *chalky transformation.* After the softening of them has commenced, or even been perfected, they gradually become thickened into a yellowish white, or greyish or blackish grey, smeary, chalky paste, which finally changes into a chalky concretion, of much smaller size than the original tubercular mass. This concretion is seated, according to the intensity and extent of the reactive process in the neighborhood of the softening tubercles, either in obliterated pulmonary tissue, or in a fibro-cellular, or callous fibro-cartilaginous capsule. In this case, also, cicatrix-like contractions of the parenchyma take place in the direction of the chalky tubercles.

"*Tubercular infiltration,* doubtless, may also undergo the same chalky transformation, for we not unfrequently find pasty masses of chalk, especially in the apices of the lungs, and aside of chalky tubercular granulations. In size and form these masses correspond to the lobules of the lungs; they are surrounded by a quite delicate sero-cellular capsule, composed of condensed interlobular cellular tissue, and in all probability are chalky *lobular* tubercular infiltrations.

"3. Finally, the crude, grey, tubercular granulations may become *obsolete,* shrivel together, and wither away. They are then found changed into opake, bluish-grey, cartilaginous, resistent tubercles, or nodules, which are subject to no further metamorphosis. This abortion or dying away of tubercles, either affects them wholly, or else only partially, and is then combined with chalky transformation, so that we find their central portions converted into chalky concretions, which are incapsuled in a layer of obsolete tubercular matter.

"In accordance with what has been above laid down, it is evident that pulmonary tuberculosis may be cured by the intervention of phthisis and the ejection of the tubercles; but the two last described metamorphoses represent more direct curative processes. Either may take place under like favorable circumstances, and as a rule we find them all in one and the same individual, for we may see cellulo-fibrous cavities, their cicatrices, and chalky and obsolete tubercles in the neighborhood of each other. All of these are commonly impacted in obsolete parenchyma, which is saturated with black pigment."

J. A. S.

ART. XIV.—*Report of the Sanatory Condition of the Laboring Population of Great Britain. A Supplementary Report on the results of a Special Inquiry into the practice of Interments in Towns, made at the request of Her Majesty's principal Secretary of State for the Home Department.* By EDWIN CHADWICK, Esq., Barrister at Law. London: Printed by W. Clowes & Sons, for Her Majesty's Stationery Office. 1843. pp. 279.

THE custom of burying without the walls of the city was very prevalent among all ancient nations, and the contrary custom is comparatively of modern origin. The great evil of interments within and around churches, had its origin in the superstitious veneration for sacred places. The heathen never buried their dead beneath the floors of their temples, and even interments within cities was scarcely ever allowed.

The subject of selecting rural places as cemeteries having been frequently of late brought before the public, it may not be thought irrelevant to refer to the prevalent usage of former times, and to the fact, perhaps not generally known, of the steady efforts which have been incessantly made to put a stop to the contrary practice on the part of those possessing political and moral influence, and the sanctions which have been given to this influence by a series of ecclesiastical councils; for we can add nothing interesting of matter strictly professional to the vast amount of proof already existing of the injurious effects on the living by crowding the city with the dead.

That it was the custom among Jews to bury the dead out of the city every one knows, and some of the Greek and Latin terms for interment signify "carrying out." This time-honored and universal practice continued until the time of Constantine, who was buried within the porch of the church which he himself founded. From this period the practice of burying in churches and church-yards rapidly increased, but not without great opposition from the very commencement.

In the year 381, interments were utterly forbidden within the city by the Theodosian code, which, in 529, it was thought necessary to ratify by the Emperor Justinian, so extensive had the practice become. This again was made the subject of ecclesiastical legislation in the year 563 by the council at Prague, and again by the council at Auxere in 586. Charlemagne in 827, the council of Winchester held in 1076, and in later times the good old Latimer, used their efforts to restore the ancient custom of suburban cemeteries. These are but a small number of the attempts made, by statutary enactments, and pastoral advice, to arrest a wide-spread and growing evil. From the "nullo modo intra ambitum murorum civitatum cujuslibet defuncti corpus sit humatum" of one of the early councils to the wish of Sir Christopher Wren, that interments should be "in cemeteries seated in the outskirts of the town," there has been one unremitted opposition to a custom so fraught with evil, which was established by superstition, and is now maintained by custom and pride.

Among the latest efforts to improve the custom in burials, is the report before us. It is an elaborate investigation of all the circumstances relating to the interment of the dead, including both the sanatory and economical arrangements. On the subject of the influence of the dead upon the living, it is replete with valuable and important statistical details, the result of minuteness of investigation, which is without parallel. The injuries to the health of survivors, occasioned by the delay of interments; the dangers arising from the escape of putrid emanations, even from deep graves; the tainting of wells; the propagation of acute diseases, and all the evils which may possibly arise from interments in churches, or in towns,—are clearly exhibited by a large accumulation of interesting facts.

The importance of the subject will, we trust, be a sufficient apology for allusion to another matter, growing out of the consideration of this department of hygiène.

The interment of bodies within the precincts of the city, is but a small part of its hygiène; and yet we see with what care this subject is investigated on the other side of the Atlantic; what an amount of laborious investigation is brought to bear upon it; what talent and learning are employed in its full elucidation, that nothing may be left undone for secur-

ing the health of the inhabitants. Why is there not more attention paid to these matters among us, where the government is expressly organized for the good of the people? Instead of having the sanatory condition of 400,000 people supervised by some one of the many men of science, whom all delight to honor, what do we see? Perhaps one in office, who is remarkable for nothing but extreme obscurity and ignorance; whose sole claim to scientific distinction consists in having a bunch of shrunken roots dangling at the door of a petty shop, devoted to the sale of root beer, skunk cabbage, and other exsiccated indigenous "yarbs," to designate the proprietor as belonging to the host of infallible practitioners, and of the species known as "Indian Doctors;" and whose official notices bear such indubitable marks of the grossest ignorance, as to be a lasting disgrace to the authority that appointed him to so honorable and responsible an office! Surely the condition of the necessitous poor alone, would demand at the hands of those who have the charge of the health of so great a mass of people, at least that it be looked after by "counsel learned in the law" of physics. J. S.

ART. XV.—*Dissertation on the respect due to the Medical Profession, and the reasons it is not awarded by the community.* By WORTHINGTON HOOKER, M.D. Read at the annual meeting of the Connecticut Medical Society, May 3, 1844. pp. 28.

DOCTORS are a discontented race, and it may be that they have sufficient reasons for being so; when it is, doubtless, a great relief to the overburdened mind and jaded body, occasionally to have some good, comfortable groans over their peculiar miseries, in a private, sociable, confidential and brotherly way. But we very much doubt if any good can arise from the publication of their distresses, and the exposure of their weaknesses. The amount of all we have read in this pamphlet is, that there are some men in the medical profession who are not so good as they ought to be, and who thereby bring discredit on the noble art itself, whereupon suitable respect is withheld "by the community" from the whole tribe. Now we can see no reason why this state of things should cause any disturbance among high-minded men, much less that it should be a reason for a call for "an increased cultivation of the esprit du corps, and an abandonment of temporary emolument, whenever required to advance the interests of the whole." It would not be worth all this trouble to remove all the vexations among us, mentioned in the dissertation. Quackery and humbug, both in and out of the profession, have always existed, and for aught we know to the contrary, always will exist, and it is one way to elicit suitable respect to look upon them with dignified professional composure.

Charlatanism has existed in some form or other from time immemorial; the ancients abounded in quacks, and it is an error to suppose, as is generally the case, that they are now more numerous than they ever were before. The Chaldeans, Egyptians, Arabians, and other nations, of whose history we have written accounts, had their full share of this

species of imposture. The Romans had their seplasiarii, and all writers, both ancient and modern, who have mentioned the subject, give a tolerably fair account of the same tricks which are now used, to impose upon the credulous. Hippocrates speaks of the prevalence of quacks, and accounts of these gentry in the Spectator, more than a century ago, appear almost to be derived from the actions of distinguished and successful medical impostors of the present day. In the 444th number of the Spectator, published in 1712,—132 years ago, there is an account of quackery as it then existed, by which it appears to be pretty much the same as it is now. The following are his introductory remarks:

"It gives me much despair in the design of reforming the world by my speculations, when I find there always arise, from one generation to another, successive cheats and bubbles, as naturally as beasts of prey, and those which are to be their food. There is hardly a man in the world, one would think, so ignorant, as not to know that the ordinary quack-doctors, who publish their abilities in little brown billets, distributed to all that pass by, are to a man impostors and murderers; yet such is the credulity of the vulgar, and the impudence of these professors, that the affair still goes on, and new promises, of what was never done before, are made every day. What aggravates the jest is, that even this promise has been made as long as the memory of man can trace it, and yet nothing performed, and yet still prevails."

So much uniformity in all ages, and in every country, would lead us to look for a similar reproduction in the amount of moral phenomena on this subject, as has been found to exist in others, and which has been noticed in the article upon vitality contained in the present number of our journal. Deaths from quackery would make an interesting item in vital statistics, and be a curious addition to the second table at p. 324. J. S.

ART. XVI.—*Thoughts on Quarantine and other Sanatory Systems, being an Essay which received the Prize of the Boylston Medical Committee of Harvard University, in August*, 1834. By CHARLES CALDWELL, M.D. [Veritas atque utilitas antiquitati præponendæ sint.] Boston: Marsh, Copen & Lyon. 1841.

Thoughts on Moral Medicine, being an Introductory Lecture. By CHARLES CALDWELL, M.D. Delivered Nov. 4, 1834.

Thoughts on Hygiène, as applicable to hot climates, more especially to the Mississippi Region, and to New Orleans. An Introductory Lecture, delivered, Nov. 8, 1836. By CHARLES CALDWELL, M.D.

THESE essays by our venerable brother, are characterized by that acuteness of observation which marks the practical physician as distinguished from the mere speculator. Worthless, indeed, are the wire-drawn distinctions that can never be brought to be of any practical use; but, as in the example before us, invaluable are those lessons which have their foundation broadly laid alike upon sound theory and close and enlightened observation. It is this which will render the occasional essay of past days valuable, as a treasure to be kept, when the immediate cause of its publication has ceased to exist. J. S.

ART. XVII.—*A Manual of Chemistry, containing a condensed view of the present state of the science, with copious references to more extensive treatises, original papers, &c. Intended as a text book for Medical Schools, Colleges and Academies.* By LEWIS C. BECK, M.D., Professor of Chemistry in Rutger's College, New Jersey, and in the Albany Medical College. Fourth edition, revised and illustrated with numerous wood cuts. New York; W. E. Dean, 1844, pp. 480.

DR. BECK's treatise needs no praise from us; its extensive adoption in numerous Colleges, and the rapid succession of editions, prove that its merits are duly appreciated. In the present edition the original plan of the work is steadily pursued, while all the improvements of the science have been introduced into it, so that there is scarcely a page which has not been altered or amended, and in many parts entirely recomposed. There is no doubt that it will be still more extensively adopted as a text book of Chemistry. J. S.

ART. XVIII.—*Anatomical Atlas, illustrative of the structure of the Human body*, by HENRY H. SMITH, M.D. Parts IV. and V.

THESE numbers complete the series of this beautiful work, which fully merits the praise bestowed upon the earlier numbers. There is one engraving, however, for which, in its details, the delineator has evidently been indebted solely to his imagination, and to which we would direct the especial attention of students for whom the work is chiefly intended. We allude to the elegant representation of the anatomical theatre which adorns the cover, where all the disciples of the lecturing professor are represented in every variety of attitude usually assumed in a lecture room, taking notes, etc., *but each one with his hat off*. Now this last mentioned particular is so great an inaccuracy, that we could not pass it by unnoticed. It is no other than an ideal representation, an idle fancy, a mere creation of the brain, having no foundation in truth. With this exception, we regard all the engravings as possessing an accuracy only equalled by their beauty, and cordially recommend the work to all engaged in the study of Anatomy. J. S.

ART. XIX.—*The Medical Student, or Aids to the study of Medicine. A revised and modified edition.* By ROBLEY DUNGLISON, M.D., Professor of the Institutes of Med., etc. Philadelphia. LEA & BLANCHARD. pp. 311.

IF the student fails in attaining the object of his pursuit it will not be for want of sufficient assistance to help him onward through the rough roads

and sloughs which impede his progress to knowledge. If he desires it, he may choose the patient, pains-taking method of investigating huge tomes of learning, and thus travel slowly, but surely, onward, as if in an old French Diligence, or a country lumber wagon; or should he wish to avail himself of short cuts, or of the locomotive high pressure system of being bewildered by half a dozen lectures a day, on half a dozen different subjects, with attendance on the dissecting room, which happily for his very existence "is not regarded as obligatory,"—he may also thus travel. Whichever he chooses, here is presented to him a kind hand gently to help him in, and to guide him in his proper course. A most valuable assistance it is to all students, and we doubt not will be duly appreciated by all who may become familiar with its pages.

J. S.

ART. XX.—*The Cyclopædia of Practical Medicine.* Parts XI., XII., XIII., XIV.

THE remarks in our last apply equally to the present number of this excellent work; which, really is, upon the whole, so good as to render the toil of the editor in revising and adding by no means burdensome.

J. S.

ART. XXI.—*Medicines, their Uses and Modes of Administration, including a complete Conspectus of the three British Pharmacopœias, an Account of all New Remedies, and an Appendix of Formulæ.* By J. MOORE NELIGAN, M.D., Physician to Jervis' street Hospital, and Lecturer on Materia Medica, etc. With Notes and additions, conforming it to the pharmacopœia of the United States, and including all that is new or important in recent improvements. By DAVID MEREDITH REESE, A.M., M.D., late Professor of the Institute of Medicine and Surgery in the Washington University of Baltimore, etc. New York: Harper & Brothers. 8vo. pp. 453.

THIS is a valuable condensation of existing knowledge upon everything relating to the medical application of chemistry, pharmacy and pathology. It therefore contains a greater variety of subjects than its title would indicate—"Medicines and their Uses;" rather an unusual characteristic in any book. The American editor, who has availed himself of all the aids within reach to improve the work, has added the nomenclature and pharmaceutics of the United States pharmacopœia, and thus rendered it highly valuable, if not indispensable, to the American practitioner. A more extended notice of this work is necessarily deferred to our next. J. S.

ART. XXII.—*Philosophy of General Principles, an Introductory Lecture, delivered before the Medical Class of the Berkshire Medical Institution, Aug.* 1, 1844. By H. H. CHILDS. pp. 32.

THIS is a singularly bold and original performance, characterized by an independence of mind as rare as it is meritorious.

The author avows himself a supporter of the *Brunonian* doctrines, which, we had supposed, were generally exploded; but so it is, as will appear from the following extracts from the Doctor's summary of "Sound General Principles," of which the doctrines aforesaid constitute in his opinion the foundation. "All abnormal action or disease must be characterized by *debility*." "The terms, sthenic disease, and disease of excessive excitement, are inapplicable, so far as they imply the necessity of resorting to remedial agents for reducing the powers of the system as a whole." "All diseases are diseases of debility; the first arising from a deficiency of stimulus, the latter from the excessive application of it. But the result is the same as regards the remedial agents, which must all possess the character of mediate or immediate *stimulants*."

Prof. Childs, moreover, is no *solidist;* for, he observes, "Effluvia, Malaria, and all gaseous poisons act primarily on the fluids, either by changing their constituent properties, or by their serving as the media through which the poison operates upon the system."

We are not disposed, at present, to question the soundness of these "Sound General Principles," but as the lecturer is a highly popular teacher in three, if not four medical schools in our country, we would humbly suggest whether the Anti-Brunonians and the vitalists ought not to bestir themselves, lest these doctrines should obtain such a foothold among American physicians, as to require centuries of literary toil before they be put down so as to "stay put." Verb. Sat.

ART. XXIII.—*An Essay on the Philosophy of Medical Science.*—By ELISHA BARTLETT, M.D., Prof. of the Theory and Practice of Medicine in the University of Maryland. October. pp. 310. Phila.; Lea & Blanchard. 1844.

WE have not room in the present number of our journal, for such a notice of this philosophical and elegant work, as its merits justly demand. It is evidently destined to create quite a sensation in the medical world; and we shall therefore give an extended analysis of its contents, accompanied by some comments, in our January number. In the mean time, we advise all our readers to purchase and carefully read it.

PART THIRD.

1.

Foreign Medical Intelligence.

ANATOMY AND PHYSIOLOGY.

1. *A short Account of a One-eyed Monster.*—The monster in question, which was a female, had a well-formed body and limbs, of the usual size at about the eighth month of utero-gestation. The head was nearly half as large again as natural, reposing upon the spine in almost a straight line, having but a trifling angle forwards; and, except at its posterior part, deviated in most respects from the normal form. In the usual situation of the frontal bone, arose a large, prominent, uniformly-rounded tumor, evidently the result of a deficiency in that part of the bony parietes, and rising forwards was palpably filled with fluid. This tumor was partly covered with hair.

Immediately below it was a single eye, perfectly central, sunk in no depression, but on an uniform level with the surrounding parts. Besides this eye no feature of the face was present; not a trace of mouth, nose, chin, or cheeks; but, about an inch beneath it, were situated the external ears, which, owing to the abrogation of the parts just mentioned, were enabled to approximate within an inch and a half of each other. Their long axes, moreover, had assumed nearly a transverse direction, their lower extremities being turned forwards; in which direction the meatuses also pointed; so that the only space which could have represented the face, even if any features had existed, was scarcely an inch and a half square.

The integuments of the head being reflected, the occipito-frontalis muscle and tendon were brought into view, forming, with the dura mater, the bulging walls of the tumor. On continuing the incision into the cavity of the skull, about two or three pints of clear amber-colored fluid were evacuated, and, in the centre of the floor of the posterior and middle fossæ, was disclosed a flattened, tongue-shaped process of nervous matter, protruding forwards from the spinal canal, and representing all that existed of the brain. It was three inches long by one and a half broad, symmetrical, azygous, without salient points, or trace of hemispheres or convolutions; its more important features, however, as of other parts of the nervous system, were reserved for a future examination, which was, unhappily, frustrated.

The occipital, parietal, and squamous portions of the temporal bones, had their usual forms and relations to each other, and appeared, from the progress of ossification, to have been eight or nine months old. The only trace of the frontal bone consisted of a narrow, ring-like portion, about two lines in breadth, just sufficient to form the coronal suture: the true frontal and orbitary portions were altogether absent.

This deficiency in the frontal bone, and also of the sphenoid (for little else than the body of this latter bone was present), and protrusion of the cerebral capsule, constituted a kind of *spina bifida* of the first of the three cranial vertebræ.

The middle and posterior fossæ of the base of the skull were of the usual capacity, whilst the anterior was, of necessity, altogether absent. The styloid process of the temporal bone, not anchylosed with the petrous portion, gave attachment to its proper muscles.

Of the bones of the face no vestige appeared, the finger, when directed to this part from before, impinging at once upon the body of the sphenoid bone, the skin alone intervening.

The eye was imbedded, as usual, in a quantity of soft fat, but was unsupported by any trace of bony orbit. There was present, however, what might be consi-

dered a peri-orbit, a continuance of the dura mater or cerebral capsule, which invested the optic nerve, and proceeded anteriorly, supported the eye, and blended at its extremity with the skin and tarsal cartilages.

The recti muscles of the eye were all present and well developed; their origins encircled the optic nerve, and appeared to arise from the periorbital membrane before alluded to, whilst their anterior attachments were normal. The superior oblique followed the usual course, its tendon passing through a membranous trochlea situated on the right side of the globe.

Of the auditory apparatus the only parts of which any rudiments appeared were the external ear, the meatus, and Eustachian tube. The former was large, but was remarkable only for the transverse direction it had assumed. The Eustachian was a continuous tube from the external meatus to the pharynx, of the same diameter throughout, and uninterrupted by any vestige of tympanum; it pursued a direction inwards, backwards, and slightly downwards, was a little curved, and lined with a smooth, whitish, mucous membrane. Its internal termination was at the posterior and upper part of the pharynx, immediately below the spine; the aperture was round and patulous, and very far exceeded in size the corresponding part in the adult. The whole length of this breathing tube, which, it should be observed, owing to a deficiency of the petrous portion, was in contact with bone by its upper surface only, was ten lines, and the distance between the internal extremity of either tube seven lines.

There was nothing unusual about the larynx; its diameter was three lines. The epiglottis was well formed.

The pharynx was capacious and had the ordinary relations; the only openings, however, into it were of the Eustachian tubes, the larynx, and the œsophagus. About a line above the os hyoides, which presented no peculiarity, was a bundle of muscular fibres having a transverse direction, the extremities, however, being somewhat deflected, so as to bear some analogy to an orbicularis oris; it formed the upper boundary to a transverse slit, which terminated, at no great depth, in a cul-de-sac, and suggested a resemblance to the mouth. On removing this muscular layer, a small, but well-formed tongue, shrunk down upon the os hyoides, was disclosed.

The bronchi and other contents of the thorax were quite natural; the lungs, collapsed at the sides of the spine, had received no air. The abdomen and limbs were perfect.

The various deficiencies in the head of this monster furnish some interesting examples of unequal advance and arrest of development during the transition from the simple to the more perfect condition. But there is something else than mere permanence of an early condition; for the eye was central, and the optic nerve traversed the sella turcica in the mesial line, a position it is never known to assume in the normal state during any period of uterine life. Two suggestions occur in explanation of this central single eye; either that it was the result of an early coalescence of the two, or that one was entirely absent, or so rudimentary as to have escaped detection. Of these, the former view is probably the more correct, for it accords with the symmetry which was observed of corresponding parts on either side of the head: moreover, in the centre of the margin of the upper tarsus, a slight indentation or notch was clearly perceptible, as if betokening a line of separation, and the two canthi bore the form of the external one in the natural eye. The only circumstance in support of the latter view was the existence of a single superior oblique muscle, which was attached to the right side. No satisfactory inference can be drawn from the presence of four only of the recti muscles; they may have been either proper to a single eye, or the external muscles of two united eyes. The subject was, unfortunately, destroyed before any dissection had been made of the internal eye.

The absence of any trace of nostril, and perhaps of true ear,* was connected, probably, with the absence of the nerves of the corresponding senses, and pointed to the fact that these diverticula from the brain exist prior to the formation of the organs in which they are destined to be lodged.

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* The absence of the tympanum alone was demonstrated, and not of the true ear.

There was, in the perfect formation of the middle and posterior fossæ of the skull, and other circumstances, reason to believe, that the brain had been, at one time, more fully developed than it was found to be at the examination; and that it had, together with some of the bones, suffered subsequently from the accumulated pressure of the fluid within the skull.

The main interest, however, of the case lies in the singular modification of breathing apparatus, which, judging from the scanty literature I am enabled to consult, is unrecorded. There is no doubt that, so far as a mere passage for air to the lungs is concerned, the Eustachian tubes would have amply fulfilled this office; for their conjoined calibres were even greater than that of the trachea, and, as in the apparatus there was nothing superadded, but a simple arrest in the development of parts, considerable testimony is added to the opinion of Huschke, who views the Eustachian tube as the remains of the superior of the bronchial apertures; the necessity for the permanent existence of this latter, in the present instance, resulting from the occlusion, or rather absence, of mouth and nostrils.

It is perhaps hardly profitable to glance at the curious medico-legal question which might arise if the abstract viability of such a monster were discussed. With a good chest and lungs, and with air-passages of sufficient dimensions leading to them, it is clear that the physical conditions for the performance of respiration were all present. The tubes, moreover, communicated with the pharynx and stomach, and although breathing had not in reality commenced, no light can be thrown in explanation of the fact of viability, in the absence of any knowledge of the circumstances attending the birth.—*London Medical Gazette.*

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2. *On Preserving Bodies for Dissection.*—Dr. John Ingliss, of Inverness, recommends a combination of the nitrate of potash and bi-chloride of mercury, for the purpose of preserving the muscles in their natural colors and effectually preventing the incursions of maggots. He dissolves from five to ten grains of the mercurial salt in a pint of water, and to this solution is added as much nitrate of potash as it will dissolve. To the naturalist it is invaluable; for if the skin of any animal is dipped in the solution and thereafter dyed, neither moth nor maggot will ever make an impression, nor will the color of either hair or feathers be in the slightest degree injured or altered.—*Lond. and Edinb. Monthly Jour. of Med. Sciences*, Sept. 1844.

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3. *Case of Malformation of the Heart of a Child, who expired on the fifth day after Birth.*—The child was well developed, and appeared to be in perfect health. On the third day it became soporose, sighed and had hurried respiration. The skin became dusky, breathing increased in rapidity, no fever, respiratory murmur puerile, with moist crepitus behind; the child died on the fifth day.

Autopsy.—There was only one large artery given off from the heart, and from this the pulmonary artery sprang. The thus united aorta and pulmonary artery was considerably larger than the aorta of so young a child. It proceeded from a large ventricle, which appeared at first sight to constitute the whole of the ventricular portion of the heart. The systemo-pulmonic artery was separated from the ventricle by semilunar valve, and from a very large auricle by tricuspid valve. Into this auricle entered by three openings, three pulmonary veins. The large auricle communicated by a small opening with another auricle, about the size of a small horse-bean, into which entered the two *venæ cavæ*, each not above two lines in diameter. This small auricle communicated with a cavity of the size of a swan-shot, in a fatty muscular mass upon the side of the large ventricle, constituting with it the whole ventricular mass, and evidently being the representative of the right ventricle. The right ventricle and the right auricle were separated from each other by small cobweb-like membranes, representing the ventricular valve.

The circulation of, in all other respects, an apparently well developed child, was thus reduced to that of a reptile of the lowest order, very nearly resembling that of a frog. The very small size of the *venæ cavæ* would lead to the supposition, that the circulation of the blood enabling a child to live in the air for five days with

so slight derangement for two days at least, could not be carried on with the adequate return of blood from the system which such veins would indicate, and that one of the three orifices by which the blood returned into the large auricle was that of a systemic vein. The auricle is of much greater capacity than that of the united auricles of a child of that age ought to be. It cannot even be conceived that extra-uterine life could continue with such an inadequate return of venous blood, as is indicated by the small proportion of the two *venæ cavæ* to the pulmonic systemic artery.—Dr. Carson *in the Report of the Liverpool Pathological Society. Dublin Journ.*, for Sept., 1844.

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4. *Upon the minute structure of the Liver.*—Unlike that of the salivary, the pancreas, mammary, and other glandular organs in which the terminal subdivisions of the excretory ducts can be readily traced as ending in free cœcal extremities, the structure of the liver in man, and, to a greater or less extent, throughout all the vertebrata, is so compact and dense as to offer the greatest difficulties in its investigation, more especially as regards the real arrangement of its ultimate secerning portion, where even the elaborate researches of Mr. Kiernan leave much doubt and uncertainty upon the mind. It is with pleasure, therefore, that, in search of further information, we would direct the attention of our readers to two papers that have recently appeared in Müller's Archives by Prof. Weber and Dr. Krukenberg, upon the minute anatomy of the liver, and in which the authors have directed their attention more particularly to the point in question, namely, the mode of termination of the hepatic ducts. According to them, the latter, so far from forming distinct lobules, anastomose freely with each other to constitute a plexus, within the areolæ of which the ramifications of the arteries and vena portæ are received, or *vice versâ* that within a terminal plexus formed by these vessels the minute radicles of the biliary ducts are intercalated, so that in a scheme given by Dr. Krukenberg of the appearance of a portion of injected liver under the microscope, these different systems of organs are seen passing the one through the spaces left by the other in a manner very similar to the warp and woof threads of a woven piece of fabric.

"The smallest biliary ducts," observes Prof. Weber, "are of much narrower calibre than in other glands. They do not terminate by cœcal extremities, and thus form the bases of separate lobes and lobules in the substance of the liver, but anastomose in such a complex manner with each other as to form a dense net-work of canals similar to that of the efferent capillaries, and, like it, continuous throughout, without being interrupted by fissures and septa of cellular tissue dividing it into lobules, extends throughout the whole viscus. If any doubt remains of the truth of the assertion, as based upon the ordinary processes of investigation, we have only to examine compressed sections of the liver of the frog under a magnifying power of 30, 50, or 100 diameters, to see most distinctly, without any further preparation, the above arrangement of parts. Here the plexus formed by the delicate biliary ducts is indicated clearly by its yellow color, and that of the capillary vessels filling up their intervals by the reddish hue derived from the blood contained within them. The great difficulty which arose in all the injections hitherto made of the liver, was to tell whether the net-work rendered apparent by these means upon its surface really belonged to the biliary ducts, or was merely the capillary vessels filled by extravasation. To remove this doubt, Dr. Krukenberg filled the hepatic ducts and vessels upon one and the same liver with differently colored masses, and then carefully examined the superficies as well as thin dried sections beneath the microscope. Upon the surface of such an injected liver, he says, "there appeared, within many of the areolæ of the capillary plexus (filled with red), a yellow spot, indicating where the mass of that color had penetrated the biliary canals. In other situations, a yellow streak was seen to pass out of one capillary areola to enter into another immediately adjoining, or else removed to some distance. In others, the yellow canals issuing from four adjacent vascular areolæ anastomosed so as to form a yellow ring, in the centre of which a red cross was visible, formed by the union of four capillary vessels. Again, I saw a distinct plexus given off, the one red,

the other yellow, from the minute ramifications of the vessels and ducts, where they lay parallel to each other. Finally, upon making sections of the same liver, red plexuses bounded by yellow, and yellow plexuses by red areolæ, were numerous, distinctly visible, and abruptly defined. Whatever be the degree or extent of anastomosis of the capillary vessels, I am at all events convinced that I have truly injected the finest hepatic canals, and that they interlace with the blood-vessels in the manner just described." So far as the fact of a plexus being formed by the ultimate ramifications of the ducts is concerned, it will be observed that both authors already cited agree with the descriptions given by Mr. Kiernan; they dissent, however, from the opinion of the latter, that this, which they regard along with him as constituting the true ultimate secerning substance of the gland, is parcelled out into lobules by septa formed from prolongations of Glisson's capsule; and still more decidedly do they disagree with Professor Müller, who, basing his views principally upon the progress of development of the liver in the frog and common fowl, states that the last biliary ramuscules end as cœca, appended to the ducts in a racemiform fashion; and in a series of observations in the same number of his journal, containing strictures upon the researches of Weber and Krukenberg, insists further upon this as the true arrangement, by an appeal to the condition of the liver in the Polar bear, after maceration, and its distinctly lobular structure in a great number of other vertebrata. For our own part, we are strongly in favor of the evidence afforded by the facts of comparative anatomy, and the study of the gradual development of glands, than of that dependent upon injection alone, as the most certain method of arriving at the truth. Now that the beautiful investigations of Mr. Bowman upon the minute anatomy of the kidney, the next most complex glandular organ to the liver, have revealed to us the real structure of its Malpighian bodies, and shown that they consist essentially of small masses of vessels contained within the dilated cœcal extremities of the uriniferous tubes, it is difficult, reasoning from analogy, to conceive that an entirely different arrangement of parts has been introduced in the formation of the liver. We think it highly probable that it will yet come to be determined, that the extreme ends of the ducts of the human liver, like those of the kidney, remain distinct from each other, devoid of any intercommunication; and that they derive the elements of their secretion from plexuses of different vessels, constituted by the artery and portal vein, surrounding, or being received within, their walls.—*Müller's Archiv.*

MEDICAL PATHOLOGY AND PRACTICAL MEDICINE.

5. *A speedy way of Raising a Blister.*—Take a watch glass of the size of the proposed blister, drop into it from eight to ten drops of the liquor ammoniæ. Have ready a piece of fine linen rather smaller than the watch glass; lay it neatly into the hollow of the glass, and immediately apply this to the skin freed from hair. In a very short time, sometimes in from thirty to forty seconds, a red circle appears round the glass, and the blister is formed.—Darcq., in *Gazetta Med. di Milano*, quoted by *London Med. Gazette.*

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6. *On the Pathology of Morbus Brightii.*—Dr. G. Owen Reese, in the course of some observations upon the state of the blood in this disease, was attracted by the fact of the extreme tenuity of this fluid in certain stages of this affection. He regards "that condition as constituting the true cause of the deficient proportion of hæmatosine observed at later periods, and which acted by interrupting those endosmotic changes occurring between the contents of the corpuscle and the chyle, when each fluid possesses its ordinary specific gravity. Further experience has tended to confirm this pathological view, and I am anxious now to allude to certain other forms of disease in which a deficiency of hæmatosine is the leading characteristic, and consider how far such morbid states may be regarded as identical albuminuria in their humoral relations. The increased quantity of water circulating in earlier stages of the morbus Brightii is no doubt

caused by the discharge of albumen with the urine taking place as a constant symptom. Thus the liquor sanguinis is deprived of one of its most important constituents, and the watery condition induced will go on to the production of that secondary state in which the absence of hæmatosine from the blood becomes the leading feature of the disease. This change from the one state to the other is well shown by the following analysis made upon blood drawn from patients suffering under the morbus Brightii: the first at an early, the second at an advanced stage of the disorder.

	1.	2.	*Health.*
Water	805·71	853·11	792·20
Solid matters of serum . .	85·56	81·28	87·85
Fibrin and corpuscles . .	108·73	65·61	119·95

"The decrease in the proportion of hæmatosine observed in persons who have lost large quantities of blood, and in anæmia from other causes, may, I am inclined to believe, be correctly explained on the same principle that applies to the above cases, and it is not difficult to understand how the antecedent condition, consisting in a loss of proper density on the part of the liquor sanguinis, is brought about.

"When large quantities of blood have been lost, the remainder of the circulating fluid absorbs water in order to maintain its bulk. The dry skin and extreme thirst observed in patients who have suffered from large losses of blood are doubtless indications of the necessity of supplying a sufficient bulk of fluid to afford the heart a stimulus to contraction; but when these cases have passed through the first dangers of hemorrhage, the anæmia which follows cannot be regarded merely as the effect of dilution of the blood, for a cause exists in that fluid which interferes with the development of the corpuscle, and keeps up the anæmiated condition.

"My friend Dr. Lever, of Guy's Hospital, informs me that in cases of violent flooding he has often observed the thirst abated by frequent sponging the body with water; and there can be little doubt of the advantage of this mode of treatment, not only as a means of allaying thirst, but of saving life; for an increase in the degree of rapidity with which water is absorbed during violent hemorrhages may make that difference in the condition of the heart which turns the scale of life in favor of the patient; nor do we possess a better means of introducing large quantities of fluid into the blood than by applying it to the extensive surface of the skin; and the stomach, as is frequently the case, may be too irritable to receive liquids. The after-treatment of these cases, as indicated by theory, would consist in the exhibition of saline purgatives and meat diet, with the use of ferruginous tonic medicines to assist in the formation of chyle rich in an element necessary to the formation of hæmatosine.

"The efficacy of this plan of treatment has been long appreciated by practitioners, and its adoption is one among the many instances our profession affords of the discovery of a practical truth as the result of lengthened and tedious experience, and without the assistance to be derived from physiology and pathology, which sciences, had they participated in the elucidation, would have enhanced the value of the fact, by enabling us to deduce general principles of treatment from the knowledge obtained, and have suggested important analogies not otherwise presentable to the imagination.

"The various forms of anæmia which attract the attention of the practitioner, in many of which no very obvious cause for pallor can be ascertained, will frequently admit of explanation, if the principles I have noticed be kept in mind, and inquiry made into all the possible causes which can produce a decrease in the specific gravity of the liquor sanguinis. It would appear that this decrease admits of being brought about in one of three possible ways: 1st, by removal of one or more solid constituents from the blood; 2dly, by inactivity on the part of the exhalents, the skin, lungs, and kidney, which will so derange the balance between the ingested and exhaled fluids as to leave an excess of water in the blood; and 3dly, by an increase of the absorbent action of the skin.

"The first of these conditions is present in the morbus Brightii, while in cases of anæmia caused by excessive loss of blood, the first and third conditions exist. The latter, however, though tending to produce anæmia, in all probability merely takes place in order to preserve life; and we are not yet in possession of sufficient facts to enable us to decide how far it may exist in any other cases either as an accessory or sole cause of anæmia.

"If we examine the histories of anæmial cases, we frequently discover that large quantities of the solid matters of the blood have escaped from the system in the form of leucorrhœal discharge, when the whole phenomena of the disease are explicable (at least so far as the pallor is concerned) on those principles which apply to the morbus Brightii. In other cases a difficulty exists in detecting any such cause for anæmia, and in these I am inclined to believe in the existence of the second condition above mentioned; and that the changes productive of anæmia have occurred in consequence of the exhalent power of the skin having become impaired.

"These cases are generally characterized by a weak pulse, the skin being peculiarly flaccid, and the surface cool, while large quantities of water pass off by the kidneys. A stimulating diet, ferruginous tonics, tepid baths, and taneous frictions, are here particularly indicated, and rapidly produce their beneficial effects.

"There is another class of anæmial cases, which, though seldom seen, are still sufficiently common to deserve attention; these constitute, in fact, a form of the morbus Brightii, but as they occur in young females slightly advanced beyond the age of puberty, and are accompanied by amenorrhœa, frequently escape detection, and are treated as chlorosis, while a more favorable prospect of recovery is entertained than would be the case were the true nature of the disease known to the practitioner.

"The long continuance of anæmia in young girls who have never suffered loss of blood, and in patients affected with morbus Brightii, who have never passed red corpuscles in quantity with their urine, are facts which, when considered in connection with the analysis of the blood in such cases, sufficiently show that the disease may be produced by an imperfection in those processes which are necessary to the genesis of the blood corpuscles. That this imperfection consists in a loss of the normal relation between the specific gravities of the liquor sanguinis and chyle, is but a necessary deduction from what we know concerning the chemical and physical conditions of these two fluids; for it is positively certain that the chyle, being of less specific gravity than the liquor sanguinis, must, as it passes into the venous system, act upon the red corpuscles so as to enter them freely; and it is equally certain that the nearer the liquor sanguinis approaches to the chyle in specific gravity, the greater will be the difficulty in supplying this ferruginous ingredient for the production of red coloring matter within the corpuscles. This being admitted, we must not forget that the anæmia caused by the positive abstraction of blood in large quantities, the bulk of which is supplied by an absorption of water, is a diseased state greatly aggravated by the difficulty which must be experienced in the reproduction of red coloring matter, owing to the approach of chyle and liquor sanguinis to the same specific gravity; and our remedies should be chosen, as in other cases of anæmia, with this view. The water should be removed by purging, nutritious diet enjoined, and iron freely administered.

"There is a mechanical condition influencing the degree of pallor, of which I cannot omit notice, as it forms an important element in the production of anæmia. It consists in a change in the form of the corpuscles, producing a thickening of their edges as seen under the microscope, and exactly resembling a state always to be produced artificially by the addition of dilute saline solutions to the blood after removal from the body. This I have frequently observed in the blood of anæmiated girls, and it is doubtless caused by entrance of the too dilute liquor sanguinis into the globule at the commencement of the degeneration, rendering the form of the corpuscles such as greatly to interfere with their circulation through their capillaries, and thus contributing to the production of the pallor. As the disease advances, the corpuscles, however, are frequently observed pale

and flaccid, the balance having been effected between the contents of the corpuscle and the liquor in which they float. In this stage, however, if the skin fail to discharge its function, or if blood be lost from the system, we must expect that the corpuscle will again become thickened, as, under these circumstances, the state of stasis is disturbed, and the liquor sanguinis will again enter freely, owing to its having become further degenerated by the addition of water.

"In conclusion, I venture strongly to recommend the adoption of the same plan of treatment in the early stages of the morbus Brightii that is found efficacious in chlorosis and the anæmia produced by hæmorrhage, viz. chalybeate tonics, saline purgatives, and nutritious diet; being satisfied of the value of the plan, which, though not immediately calculated to remove the congested condition of the kidney known to exist in the complaint, is still of efficacy in preserving the normal state of the blood, and may thus fairly be considered as assisting in recovery. It will be obvious, from what has been stated above, that the removal of nephritic congestion should not be effected by bleeding in any form, inasmuch as it tends to produce the condition of blood which it is desirable to avoid, as a forerunner of the secondary evils of the morbus Brightii. Counter-irritation and dry cupping are the most desirable methods of relieving the kidney."—*Med. Gaz.*

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7. *Dr. Cormack on Ipecacuan as a Counter-irritant.*—Dr. Cormack detailed the result of his hospital experience of ipecacuan as a counter-irritant in the form of ointment, as recommended by Dr. Hannay of Glasgow. Dr. C. had tried the ipecacuan in a great many cases, and in the proportion of 10 to 12 of them, it had failed to produce any eruption, even when the powder was in the proportion of half an ounce to an ounce of lard. In a few persons only, with a delicate skin, or who had had recent blisters on the surface experimented on, did he succeed in bringing out an eruption. The eruption was vesicular in three cases which were carefully observed. In the same persons on whose skin the ointment produced no effect, a good crop of pustules was in every instance brought out by one, two, or three frictions with a liniment of equal parts of olive and croton oil. Dr. C. believed that there were many vegetable powders which would be found more active counter-irritants than ipecacuan.

Dr. Handyside and Dr. Douglas Maclagan stated that they had met with no good results from its employment. Their experience corroborated that of Dr. C. —*London and Edinburgh Monthly Journal of Med. Science.*

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8. *Caoutchouc as a Remedy for the Tooth-Ache.*—Caoutchouc, becoming very smooth and viscous by the action of fire, has been proposed by Dr. Rolffs, as an excellent remedy for filling hollow teeth, and alleviating the tooth-ache proceeding from that defect. A piece of caoutchouc is to be put on a wire, then melted at the flame of a candle, and pressed, while warm, into the hollow tooth, and the pain will disappear instantly. The cavity of the tooth should first be cleaned out with a piece of cotton. In consequence of the viscosity and adhesiveness of the caoutchouc, the air is completely prevented from coming into contact with the denuded nerve, and thus, the cause of the tooth-ache is destroyed.—*Buchner's Repertorium für Pharmacie.*—(*From the London Medical Times.*)

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9. *Greek Leprosy in Sardinia.*—The Sardinian government have lately been led to institute particular inquiries into the prevalence of this formidable disease in their dominions; the result of which is, that about 100 persons have been found laboring under the true leprosy. Dr. Trompeo, the reporter, states that the disease agrees, in its nature and characters, entirely with the Eastern leprosy. He is of opinion that it is contagious, and that it might be got rid of by entirely isolating the diseased.—*Giorn. delle Scienz. Med. di Torino*, Jan., 1844.

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10. *Amaurosis cured by Inoculation with the Sulphate of Strychnia.*—The subject was a lady, 27 years of age, of nervous temperament, affected with incomplete amaurosis of the left eye, and commencement of the same disease in the right one. The disease was of three months standing, and of rheumatic origin; after two

months' fruitless efforts, Dr. Verlegh tried inoculation with the sulphate of strychnia in the neighborhood of the orbit. A grain of the salt was dissolved in two drops of water; the first day 12 inoculations were performed, six above the eye in the course of the supra-orbital nerve, six under, and on the side of the nose where the ethmoidal filaments and nasal branch terminate, and whence arise the filaments which go to the iris. There was no effect that day; but next day some slight tremors occurred in the neighborhood of the inoculated spots. After two days' rest the inoculations were repeated, and the number of punctures increased to 18. The patient now became sensible of a slight haziness. After five successive inoculations carried to the length of 30 punctures, she commenced to distinguish objects; after the eighth, vision was completely restored; the contraction of the pupil gradually increased, and the other symptoms diminished after five grains of the sulphate had been used; during the same time inoculations were had recourse to in the neighborhood of the right eye; after the lapse of two months the patient continued perfectly restored; and this the author conceived sufficiently long to warrant him in considering the cure as permanent.—*Gazetta Medica di Milano, April*, 1844, *from the Lond. and Edin. Med. Jour. of Science.*

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11. *Clysters of Belladonna against Ileus.*—Instead of remedies introduced into the mouth, which only tend to increase vomiting, Dr. Karl Schwabe recommends the use of clysters of belladonna-root, followed by a warm bath. At least four scruples of belladonna must be administered in each clyster to produce the desired effect. So large a dose, by paralysing, as it were, the muscular fibres of the intestinal tract lying below the strangulated part, removes the spasmodic tension, and allows the upper part of the intestinal canal, in consequence of the removed resistance, to relax, or to push the occluding substance towards the lower end. In the following case real poisoning happened after the administration of the above dose of belladonna:—A strong man, fifty-two years of age, complained, about half an hour after the application of the clyster, of dryness in the throat and difficulty in swallowing. He gnashed his teeth, was convulsed in the upper and lower extremities, and began to be delirious. Pulse full and strong, but little accelerated; look wild and fixed; pupils dilated; face flushed. The author, fearing apoplexy, ordered a venesection to one pound and a half, and clysters of vinegar. Within four hours the above symptoms gradually disappeared, the bowels were relieved (promoted by small doses of castor-oil and coffee), and the patient completely recovered from this complaint.—*Brachmann, in Schmidt's Jahrbücher der Gesammten Medicin.*

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12. *The Effects of Antimony on Infants.*—Mr. Wilton, in the "Provincial Medical Journal," gives the details of several cases, in which antimony, exhibited internally to children, caused excessive depression and exhaustion, and in two cases a fatal termination. The principal post-mortem appearance was an exceedingly ex-sanguineous condition of every part of the body. Mr. Wilton observes that antimony is a dangerous remedy for children, and always requires caution and observation in its use. To the truth of this remark we can add our own testimony.—*London Medical Times.*

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13. *On the Use of the Alcoholic Lotion in Phthisis Pulmonalis.* By MARSHALL HALL, M. D., F. R. S., &c.—So many persons affected by incipient phthisis, marked by dulness of sound on percussion, and no doubtful pectoriloquy under the clavicle, hemoptysis, and disposition to chills, heats, and early morning perspirations, &c., have been benefited and restored to perfect health by the remedy or remedies which I am about to mention, that I cannot but think that they possess great efficacy.

The first and principal of the remedies is an alcoholic solution, constantly applied by means of six folds of linen over and across the upper lobes of the lungs.

One part of pure alcohol is mixed with three parts of water. It is applied tepid first, and afterwards of the temperature of the atmosphere. It is applied in *small* quantity at a time, every *five* minutes, so that the application may always

consist of alcohol and water. (If applied in large quantity and less frequently, the alcohol would evaporate, and water alone would be left, and this would be the source of a feeling of discomfort, instead of the feeling of glow which the alcohol induces.) The application is easily made; a piece of soft linen, of the size of a large sheet of letter paper, being folded in the usual manner, is then folded twice more, in lines parallel with the first, so that the whole consists of six folds. These are stretched, applied across the upper part of the thorax, just below the clavicles, and fastened to the shoulder-straps or other part of the dress, which latter is to be arranged so as to be readily opened and closed. A sponge, the size of a walnut, is then filled with the lotion, and pressed upon the linen along its whole course, the dress being opened for this purpose, and immediately closed.

This operation need not occupy five seconds. It should be repeated, as I have stated, every five minutes. The application should be incessant during the day and all waking hours, the dress being light, or even entirely removed, so as to allow of a free and rapid evaporation. It is suspended during the night. It is by no means my wish to laud this remedy beyond its just value: but I have no hesitation in asserting, that it possesses a power in checking the progress of the deposition and softening of the tubercle in the lungs, beyond any other which I have ever tried. And the number of patients who have recovered from incipient phthisis, and who, after many years, are still living, and in apparent health, induces me to express myself in strong terms in regard to its extreme value.—*Abridged from the Lancet, for April*, 20, 1844, *Lond. and Edin. Jour.*

14. *The Pulse as a Means of Diagnosis.* By Dr. Hamersyk of Prague.—In general the number of the arterial pulsations corresponds with the systoles of the heart, but the pulsations and the systoles are not exactly synchronous. But it is important to know that the pulse at the wrist, at the temporal artery, and at the femoral, near Poupart's ligament, are perfectly synchronous, unless from some cause obstructing the regular arrival of the blood at any of these points. As to the frequency of the pulse, it is always proportioned to the severity of diseases, particularly in pneumonia. The author has seen an adult recover whose pulse amounted to 150 in the minute. It has been stated that the pulse is slower in cerebral affections; this, if true, would put us in the way of determining what are the nerves which regulate the movements of the heart. Heien records the case of a man in whom the pulsations of the heart stopped from time to time, during an interval corresponding to four or six pulsations. These stoppages, during which the patient retained his intellectual powers, but could neither speak nor move, at length came on as often as ten or twelve times a-day. On dissection, the medulla oblongata was found pushed to one side, and the great cardiac nerve and the left nervus vagus surrounded with dark-colored knots. The development of the pulse varies with the quantity of blood, its loss by bleedings, evacuations, exudations, &c., &c.; and depends also on diseases of the heart (its orifices and walls), and on diseases of the uterus. At the beginning of inflammations and acute diseases, when the orifices of the heart are normal, the pulse is more or less full, and becomes smaller in the course of the disease. In abundant effusion the pulse is small, because, according to the author, the arteries, receiving a less powerful column of blood, contract the more. Thus, we see the pulse small only in peritonitis, and very acute enteritis. It is not so when the effusion takes place slowly, nor in acute diseases accompanied with great prostration; the degree of fulness retained by the pulse in these last is owing to the loss of contractility in the arteries. In effusions which take place slowly into the pericardium, the pulse becomes as small as it does in those which take place rapidly, which is to be ascribed to the loss of power of the muscles of the heart. A double pulse is observed only in the large arteries and in dangerous diseases. A sonorous pulse is met with in very various affections; it yields a peculiar sound to the ear, and a vibrating sensation to the finger, such as is felt when one touches the chord of an instrument in a state of vibration. The author attaches little importance in the distinction of the pulse into hard, soft, full, contracted, &c.—*Oesterreichische Jahrbücher, quoted in Gazette Médicale de Paris, March*, 1844.

15. *Case of Ephidrosis, the Perspiration having an Alkaline Reaction.*—A man, 45 years of age, often affected with rheumatism, began, in December, to perspire profusely every morning, rheumatic affections being, at the same time, very prevalent. The perspirations gradually increased, and so reduced the patient, that, at the end of January, he was emaciated to a skeleton, and could not raise himself in bed without assistance. The perspiration, which was more profuse at night than during the day, exhibited a peculiar earthy smell; it restored to reddened litmus paper its original blue color, but contained no sugar. With all this, the patient was perfectly free from fever, and only felt a little chill, when kept out of bed, whilst it was being dried; his appetite was very good; thirst slight; urinary excretion increased, rather darker than usual, but neither exhibiting the presence of albumen, nor any precipitates; it was acid when first voided, soon after becoming ammoniacal; bowels regular. The thoracic and abdominal organs being all in a perfectly healthy state, the author considered the disease as idiopathic ephidrosis (having concluded, from the history of the case, that it could not be an attack of irregular intermittent fever). Different remedies were employed, without apparent effect: purgatives and diuretics, bark and quinine, mineral acids, chlorine, internally and in the form of lotion, alum, acetate of lead, &c., till the disease, after the duration of nineteen weeks, as gradually disappeared, as it had been developed. But, even then, the usual strength was so slow in returning, that six months after the entire cessation of the perspirations, the patient could not perform his accustomed work. The foregoing case is so far remarkable, that, at a time when the acid was so decidedly prevalent in some of the secretory products, the perspiration of the man not only did not have an acid reaction, but, on the contrary, colored the reddened litmus-paper blue.—*Dr. Philip in Casper's Wochensehr.*

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16. *Inflammation of the Appendix Cœci Vermiformis*—This disease is not so rare as is generally imagined, although it is frequently mistaken in practice. The following are its symptoms:—*continued* (not remitting), deep, lancinating pains, in the regio iliac. dextra, gradually increasing within 12 or 24 hours, and extending over the abdomen towards the right and inferior part: increased by movement of any sort, by coughing, and by the slightest pressure; also, bilious vomiting, obstinate constipation, dry tongue, covered with a brownish fur, great thirst, quick small pulse, but little urinary excretion. The patient lies mostly on his back. In a short time, great weakness supervenes, which ends in death, from the third to the sixth day. If the disease continue above that period, at the eighth or tenth day, a circumscribed tumor, more or less moveable, is generally observed in the right iliac region, attaining the size of a walnut, or even of an egg, and terminating in fæcal abscess, in consequence of gangrenous perforation of the processus vermiformis. The morbid action of the peritonæum is indicated by the extended inflammation, following the spontaneous opening of the abscess, and the effusion of its contents. This stage is evidenced by the sinking of the tumor, accompanied by inflation of the whole abdomen, anxiety, prostration; pulse small, and scarcely perceptible, but greatly accelerated; extremities cold, &c.; and sometimes there is retention of urine, and fæcal vomiting. The autopsy generally shows; the processus vermiformis, black, gangrenous, perforated and diminished in size; effusion of pus and fæces into the abdominal cavity; the peritonæum covered with an exudation of lymph, thickened, perforated, and sometimes gangrenous; the intestinal convolutions joined together by pseudo-membranes; the psoas, iliacus, and quadratus lumborum muscles, changed in their structure, softened, and blackish. The most frequent *cause* of this disease is, mechanical injury, as that occasioned by fruit-stones, gall-stones, &c., arriving at the appendix of the cœcum, and squeezing themselves into it. Sometimes, the complaint is undoubtedly secondary, proceeding from a primary inflammation of the cœcum, or of the cellular tissue lying behind it and the colon ascendens (*perityphlitis* of Puchelt); perhaps, psoitis might likewise lead to inflammation of the processus vermiformis. A singular fact is, that the cases, hitherto observed, have occurred only in individuals between the ages of 18 and 50, and very rarely in children or old people. According to Grisolle, the male sex is more subject to it

than the female. As to the *diagnosis:* it may be confounded with inflammation of the cœcum (the obstruction is generally, however, more obstinate and constant in the latter); with *perityphlitis* (but this, according to Puchelt, mostly arises after a chill, the pain first appearing in the hepatic region, having an inflammatory, rheumatismal character, and becoming fixed, only at a later period, in the region of the cœcum and colon, from which it seldom extends further). From *peritonitis* and *enteritis*, the disease is distinguished by its position in the right iliac region, by the circumscribed nature of the tumor, &c. *Psoitis* is distinguished by its seat in the lumbar region, by its arising after some external injury, by the flattening of the buttocks, and by the impossibility of turning the thigh outwards. The *prognosis* is generally unfavorable; recovery only taking place when stools ensued before the formation of abscess, attended with decrease of the symptoms. *Treatment:* twelve to twenty leeches; venesection, cautiously applied; emollient cataplasms; clysters of camomile tea; linseed oil and soap; warm baths, &c.: internally—purgatives of sulphate of magnesia, ol. ricin., or infus. sennæ compos., with potass. If these remedies are rejected, Burne recommends: 6 grs. of extr. colocynth. co., 2 grs. of calomel, with 1 gr. of opium, to be given every six hours. If the symptoms do not decrease, it must be carefully ascertained whether a tumor has formed, in which case, a timely incision may still save the patient. If effusion of pus into the peritonæum has already taken place, Stokes, Graves, and Chomel, recommend large doses of opium (one grain every hour); in some cases, the use of morphia, by the endermic method, is said to have been very successful. The author concludes by enumerating several cases.—*Dr. Burger, in Hufeland's Journal.*

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17. *Effect of Electro-magnetism on Paralysis.* By Dr. Shearman, Rotherham.—In a very excellent summary of the proceedings of the Sheffield Medical Society, by Mr. Law, we find the following notice of a case of Dr. Shearman's.

The patient, a lady, was 51 years of age, and had suffered for some months from tic doloureux of the right inferior maxillary nerve. On January 31, 1841, she was suddenly seized with an extraordinary attack of vomiting. She fainted, and had loss of power over the arms when in the upright, but not when in the recumbent posture. On the evening of the 1st of February, she found it impossible to swallow anything, and the sickness subsided. There were no symptoms of inflammatory action. Subsequently she had paralysis of the left side of the face, and of the right arm and leg. The patient became exceedingly feeble, and neither external nor internal stimulants had any effect. Dr. Shearman treated the case as he would have done if it had been one of palsy, succeeding a slight fit of apoplexy. Nothing could be introduced into the stomach except through the œsophagus tube. On the 25th of February, electro-magnetism was applied, with the sanction of Sir A. J. Knight, to the back of the neck and chest in the course of the œsophagus, to the left side of the face, and from the spine in the course of the nerves to the right arm and leg. This was done one hour at least three times a day for a month, and afterwards twice a day. The nutritious and stimulating injections into the stomach were continued until March 9th, when she could swallow so well that the œsophagus tube was unnecessary. Pretty good doses of quinine, and other stimulating tonics, in the way of nourishment, were administered; and great attention was paid to the digestive organs. On the 26th of June she could walk up and down stairs tolerably well. From this time, the electro-magnetism was gradually discontinued. She got quite well, and is so at this moment.

This is clearly a very rare case. While it was going on, Sir A. J. Knight and Dr. Shearman consulted all the authorities within their reach without obtaining any information respecting it. Dr. Shearman referred the case to Dr. Abercrombie, who acknowledged that he was quite at a loss with regard to the state of the spinal cord. There can be no doubt that in this case there was no structural disease. This seemed to be the general opinion of the society. With respect to treatment, the writer doubts whether the electro-magnetism is entitled to the credit of having effected the cure; or whether this should be attributed to the quinine, stimulating tonics, and the great attention which was paid to the digestive organs. Paralysis occasionally terminates favorably quite irrespec-

tively of medical treatment, and the acknowledged obscurity in which the proximate cause, in the case under consideration, was involved, demands especial caution in assigning to each of the various means employed in the treatment, its due share of credit. It is by no means impossible, that the electro-magnetism, instead of having carried off the complaint, retarded the cure; and that this was ultimately accomplished by nature, assisted by the general treatment. Until a series of cases treated with, have been contrasted with a parallel series treated without, electro-magnetism, it would be unphilosophical to pronounce a decided opinion on this principle as a curative agent in paralysis. Although the writer has employed electro-magnetism in a variety of cases, during the last twelve months, yet he has hardly been able to verify a single observation of any one of its numerous and zealous advocates. Dr. Shearman used either the negative or positive pole, as chance directed. Now, Ritter asserts that the former diminishes while the latter augments the powers of life, and J. D. Humphreys, medical galvanist, with Chas. Woodward and others, say that the positive pole exerts a salutary influence, by exhilarating the spirits, and infusing feelings of energy and strength; while the negative excites a sense of exhaustion and irritation. These writers distinctly state that the only effect of the negative pole, if applied to the seat of a disease, would be to aggravate its worst symptoms. How are these opinions to be reconciled with Dr. Shearman's belief, that he had cured his patient by an indiscriminate use of the oxidating and deoxidating electricities?

Dr. Wilkinson, Dr. Hodgkin, Mr. Ware, and Mr. Carpue, ascribe wonderful power to electro-magnetism in diseases affecting respiration, circulation, digestion, and secretion. According to these gentlemen, there is hardly a complaint which it will not either cure or relieve; or an indication in therapeutics which it will not satisfactorily fulfil. The writer can reconcile the discrepancies between the statements of authors and his own experience, only by supposing that the publications on this subject contain many errors. With respect, however, to the case under consideration, it is right to say the society generally agreed with Dr. Shearman, in ascribing the cure to electro-magnetism; and that Dr. Abercrombie speaks rather favorably of this agent.—*Prov. Med. Journal, May* 15, 1844.

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18. *Electricity in Poisoning by Laudanum.*—Mr. Corfe, of the Middlesex Hospital, has related an instance of the good effects of electricity under these circumstances. A man was admitted, having taken an ounce and a half of laudanum on the preceding evening, six hours previously. "In the first instance I ordered the administration of the stomach pump, at which period, to all appearances, he was a lifeless corpse; the pupils were contracted to a pin hole in size; the pulse was intermitting, and not more than 40; the respirations convulsively performed at intervals of half a minute; the face livid, and the extremities bluish and cold. After the stomach had been relieved of its contents, green tea, with ammonia, was injected therein; flagellation with thin splints and wet towels, the cold douche, turpentine stupes and sinapisms to his calves and abdomen, were applied in succession, without the least improvement in his condition. The bladder was relieved of six or eight ounces of light colored urine by the catheter. I then thought of a most powerful remedy, which was attended with extraordinary success; I allude to the electro-magnetic battery, conjointly with electricity, which was set to work upon him soon after four o'clock. The pulse became more steady, firm, and frequent; the respirations more indicative of resuscitation. Our powerful electrical machine was now got into full play before a large fire, and the jar filled, when some brilliant sparks and strong shocks were occasionally passed through his head, spine, thorax, and abdomen."—*Lancet, January* 27, 1844.

The result of this was, that the man opened his eyes, and his mouth too, abusing the operators for a pack of rascals who were "trying specimens" on him. But incomparably the most satisfactory effect was produced by giving him a shock on the tip of his nose. To use a phrase of the ring, he *rallied* wonderfully under this—a hint worth taking.—*Med. Chir. Rev., April*, 1844.

19. *Cure of Incipient Pulmonary Consumption.*—The observations of Simon, Andral, &c., show that in the early stage of tubercular consumption, the blood corpuscles gradually diminish in number; this accounts for the early disturbed state of the digestion. Digestion may either be abnormal, as regards its influence on the blood and its secretions, or as regards the state of the proper organs. In the former case, the diet must be so regulated as to ameliorate the formation of the blood; in the latter, remedies must be applied to cure the diseased organs. Milk, and food prepared from milk, are the fittest forms of nourishment. Eggs are more difficult of digestion, on account of the albumen they contain. Asses' milk is preferable to common milk, on account of its abounding in sugar and extractive substances, and from the small quantity of caseine contained in it (which would be most apt to disturb digestion). Should this small quantity of caseine interfere with digestion, the whey of the milk is to be used, and amylaceous paps, prepared with milk and water, are to be substituted for the caseine. If the digestion is too sluggish to assimilate the milk, muriate, or sulphate, of soda is to be mixed with it (Seltzer of Roisdorf water may be used for that purpose). The *Kesselbrunnen* of Elms might also be used, if its excess of carbonate of soda be not too irritating to the lungs. Besides milk and amylaceous substances, those vegetables may be taken which contain little albumen or starch, but much sugar and oleaginous parts. Animal food, abounding in albumen, easily disturbs digestion; very fibrous food is too exciting; that which is fattish, is better borne; gelatine is injurious. These views explain, why milk, pap, animal fat, linseed oil, yolk of eggs, honey, &c., are recommended as domestic remedies against consumption, and indeed, are sometimes used with great advantage. Frictions with oil, or lard, with baths, &c., are also useful, unless they check the moderate perspiration, which is often of some benefit in the first stage; cod-liver-oil requires a good digestion, but is occasionally advantageous on account of the free acid which it contains. If we consider the quantity of watery, saline, fatty and glutinous substances, which are excreted through the healthy skin, we shall find it quite natural to suppose that the deranged activity of the cutaneous surface must have a great influence on the formation of tubercles. Flannel ought, therefore, to be worn all over the body (to prevent taking cold), and to be changed every two or three days. Excretion of the skin must be promoted, but not by diaphoretics, which would irritate the lungs. Stokes' liniment, consisting of oil of turpentine and acetic acid, operates both on the skin and on the mucous membrane of the bronchi; daphne mezereum, and issues, are likewise recommended. Regular intermittents check the formation of tubercles, whilst their too early suppression promotes tubercular deposition. If tubercles are already formed in the lungs, the circulation must be prevented from being either too rapid or too slow. In both cases, the deposition of tuberculous matter from the blood would be favored: in the former by a too frequent, and in the latter by a too prolonged, contact between the blood and the lungs. Not only bronchitis, pleuritis, and pneumonia, but some other diseases of the chest, promote and occasion tubercles. Great irritability of the heart and lungs sometimes produces tubercular deposition, and ought to be treated with digitalis, prussic acid, &c., or with the vapors generated from a mixture of belladonna and marsh-mallow leaves, laid on hot iron plates. Cold does not produce tubercular disease, but it favors inflammation of the tubercles when formed. Jeffrey's respirator is very useful in securing an uniform warmth of temperature. Great exertion, running, jumping, &c., cause dangerous inflammation of the tubercles. Emetics (sulphate of zinc, and ipecacuanha, according to Hughes) are very useful in the beginning of the disease, and ought to be repeated frequently. If tubercular consumption has been caused by trouble, want, self-indulgence, &c., country air, animal diet, riding, etc., are to be recommended. Also, the cortex chinæ, with sulph. aurat. If copious perspirations are combined with great weakness, and but little cough be present, Graves' remedy is very useful.

℞ Infus. cascar. ℥vii.
Quin. sulph. gr. ss.
Acid. sulph. dilut. gutt. xv.
Tinct. hyoscyam. ʒss.

Two tablespoonfuls every three hours.

Frequent exercise, nourishing diet, a little old wine, but no tea. The remedies hitherto used, to remove tubercular disease, do not seem satisfactory. Iodine is more fit for scrophulous than tubercular consumption; sal-ammoniac increases the sputa without permanent relief; potash excites too frequent coughing. Hæmoptysis is sometimes a favorable effort of nature to discharge the superfluous blood, and ought not to be stopped too suddenly. In fact the treatment must always be in conformity with the peculiar constitution, and the cause of the complaint.—*Nasse in Schmid's Jahrbuch der Gesammten Medicin. Med. Times.*

PATHOLOGICAL, THERAPEUTICAL, AND OPERATIVE SURGERY.

20. *New Method of Operating for Hare-lip.*—It has been recently remarked, but it is not the less just on that account, that the most successful operations for hare-lip constantly leave behind a very ungraceful and inelegant furrow upon the free margin of the lip. M. Malgaigne has lately discovered a method, which, in this respect, appears more advantageous than any other.

He commences the incision at the superior part of the lip, and performs it from above downwards, employing scissors, in the same manner as in the ordinary operation, only when he has arrived as low as possible, without detaching the cut piece, he stops. The same plan is followed on the other side of the labial fissure. There are then two small flaps which are adherent to the lip by a pedicle. After having re-united, by the aid of pins, the two margins of the cleft, in their whole extent, except towards their free border (that is towards the bottom), these flaps are brought from above downwards, and approximated face to face. The operator, then, judging of the length which it will be proper to leave them, in order to prevent the furrow which is afterwards so much to be dreaded in this point, shortens and finishes them as he thinks fit, preserving a piece varying in size according to the extent of the vacuum which he has to fill. Union is afterwards effected by approximating them with one or two interrupted sutures, or with a fine insect-pin. If care is taken to place these uniting agents very near the free margin of the lip, the cicatrices will be scarcely visible.—*Gazette Medicale de Paris, from the Dublin Journal.*

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21. *Agglutinative Bandage, with Caoutchouc* (Kemmerer).—A piece of India-rubber is touched with a cautery at a white heat, and it immediately melts into a soft mass. A piece of glass, the width of the cloth, is then used to compress and crush the softened mass, which is forced to spread out between the cloth and itself. As it adheres very strongly to the cloth, and on the contrary very slightly to the vitreous surface, it is always easy to take away the latter, and separate it from the smooth surface of the bandage.—*London Medical Times.*

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22. *Employment of Caoutchouc to arrest the Hæmorrhage from Leech-bites* (Berthold).—A piece of caoutchouc is cut about a line thick, and five or six long and wide; one end is placed in the flame of a candle so as to melt its surface; it is then allowed to cool, and gently rubbed on Joseph paper to render its surface smooth, after which it is applied to the bite, which had been previously compressed for a few seconds, and the blood cleared away. The little bit of caoutchouc is next covered with a slip of diachylon plaster, and not removed for several hours. —*Ibid.*

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23. *Cauterisations employed to prevent and cure Phlebitis and Purulent Infection* (Bonnet.)—M. Bonnet mentions five cases in which he employed cauterisation with the red hot iron to prevent and cure phlebitis, all of which terminated

successfully. He also narrates two cases of purulent infection cured by cauterising the wound with the red hot iron, or, what is better still, with the paste of the chloruret of zinc (see second edition of the "Formulaire," p. 321). The results are as should attract the attention of surgeons.—*Ibid.*

24. *On a means of arresting Nasal Hæmorrhage* (Negrier).—This plan has already been made known in a preceding *Annuaire.* It consists in raising one or both arms at once, at the same time closing by lateral pressure the nostril or nostrils whence the blood issues. M. Negries is convinced that lifting up the arms diminishes the ascending motion of the blood to the head. He has applied his plan of treatment to cases of intense headache, accompanied with stupor and cerebral congestion.—*Ibid.*

25. *Extirpation of the Spleen.*—M. Berthet has published the details of a curious case of extirpation of the spleen in the human subject. An individual in a quarrel was stabbed with a knife in the left side. The author called in eight days after, recognized a considerable tumor formed by the spleen, which exhaled a strong odor of putrefaction. He cut it out, and after a few methodical dressings the patient got well, and lived thirteen years and a half. His digestion was generally well performed, a circumstance which induces the belief that the spleen is an organ not more essential to life in man than in the animals from which it has been removed by experimental physiologists. At the end of this time, he died of pneumonia. At a *post mortem* examination, a very small portion of the spleen was found, no bigger than a filbert, adhering to the external parietes of the stomach.—*From the London Times.*

26. *Treatment of Cartilaginous Bodies in Joints.*—On this subject, Mr. Liston, in his lectures on the diseases of the joints, says, as regards the management of cartilaginous bodies in joints, it is often absolutely necessary to free the patient from the annoyance they occasion. After they become loose, they are apt, from time to time, to slip betwixt the bones, to cause great pain, and seriously to impede progression. They do occasionally form a bed for themselves, and cause little or no uneasiness after a while; but this is the exception. It was the custom years ago to remove these bodies by incision, and this was contrived in such a way that the opening through the skin did not correspond with that in the capsule. The skin was drawn aside, opened, and the body cut open. After its escape, the integument being let loose, resumed its place, and was then put carefully together. Union often took place, and if the joint was kept quiet, the patient recovered without further risk. But, again, if the wound did not unite, and suppuration was established in its track, inflammation of the joint, and disorganization of the tissues composing it, not unfrequently happened. The limb was thus put in jeopardy, and sometimes also the patient's life. Another and improved mode of proceeding was proposed some years ago by Dr. Goyraud of Aix, and at the same period by Mr. Syme of Edinburgh. This plan I have pursued in several cases with excellent success. It consists in subcutaneous division of the capsule of the joint, and the lodgment of the cartilaginous body in the cellular tissue. The proceeding is not unattended with difficulty, and it is one which a person not accustomed to undertake operative procedures will be exceedingly apt to fail in. The fixing of the mass is often not an easy matter. It may, moreover, escape into the joint during the incisions. The position of the cartilage being secured as well as possible, the small instrument—the needle-like knife—is introduced at a distance from it; the capsule being then cut to the requisite extent, the body is thrust or pulled out and lodged in the cellular tissue in a space previously prepared for it. There it will generally remain without causing the slightest annoyance. In a case which was lately under my care, either five or six of the cartilaginous masses were thus removed from the joint as they became loose and troublesome. Two of them were ultimately removed by incision of the skin, one necessarily on account of diffuse infiltration and formation of matter. The others now lie under the skin comfortably enough.

Lancet, Dec. 2, 1843.

27. *Amputation.*—Dr. Bullen gives the result of his experience with respect to amputations. The cases from which he draws his conclusions, are 58 in number; of these, 29 were amputated below the knee, 26 by the circular, and 3 by the flap operation; two cases terminated fatally after the circular operation, and one after the flap, being a proportion of one in thirteen cases in the former, and one in three in the latter. Of the operation above the knee, thirteen were circular, of which five died, and six flap, of which one died. Of the arm, there were three circular, and no flap operations; all recovered: of the fore-arm, five circular, and one flap; all recovered: and of the shoulder-joint, one flap; which also recovered. Dr. Bullen prefers the circular operation below the knee in primary cases, and where the integuments are vascular and healthy; but when the subject is feeble and emaciated, and the circulation languid, he thinks operating with the posterior flap presents decided advantages. The flap operation does not appear very applicable above the knee; the arteries are cut obliquely, and, without great care, may be productive of secondary hæmorrhage, and the bone is apt to protrude at the external angle of the wound, even after the lapse of several days, and after considerable union has taken place. The circular operation in amputation, above the elbow and below the lower third (this locality for operating is not clearly defined), seems preferable to Dr. Bullen. The superficial position of the brachial artery and nerve militates against the feasibility of the flap operation. If the operation be needed in the upper third of the arm, Dr. Bullen advises disarticulation at the shoulder-joint in lieu thereof, on account of the exceeding difficulty with which the artery is compressed, and also because there is a possibility that the extremity of the bone may be drawn by the spasmodic action of its muscles in such a way as to compress the axillary plexus. An example of this is recorded by Dr. Bullen, in which case the pain was so severe as to cause the patient to solicit the removal of the bone. It was relieved by padding and bandaging, by which application the bone was kept stationary. Amputation at the shoulder-joint, Dr. Bullen regards as a safe and easy operation. In injuries of the hand, it is important to preserve as much of the member as possible. Much of the success of modern operations is due to the use of small ligatures, in securing the blood-vessels, and the very simple manner in which the wounds are dressed. This improvement in surgery Dr. Bullen attributes to his father, who had recourse to it in an operation he performed in 1800, although it is claimed by Dr. Hennen and Mr. Cooper, for Mr. Veitch, a naval surgeon. In those cases where amputation has been performed upon old subjects, in whom the lower extremity has been for a long time the seat of chronic inflammation, the veins of the leg are sometimes found enormously enlarged and varicose, and the arteries few, and much diminished in size. When the limb is removed, the venous hæmorrhage is profuse, and difficult to check. The tourniquet, by causing venous congestion, increases the flowing of blood, and even the compression of a bandage brings on a recurrence of venous bleeding for hours after the operation. On carefully examining the condition of the limb, the muscles are found to be purple and soft, and do not retract, and the integuments are flabby, and inclined to a bluish color. There is a manifest atony of the parts, a deficiency of the vital energy which is requisite to set up and carry on the reparative action, by means of which a sound union can be effected. From the moment of operation, the torpid and relaxed state of the blood-vessels demands stimulation. The first object is to arrest the hæmorrhage; for that purpose the tourniquet, and whatever may cause pressure on the limb, should be immediately removed, the thigh bent upon the pelvis, so that the stump may be thrown up, and kept in a perpendicular position, and a stream of cold water should be poured from a height over the face of the stump. These means generally check the more profuse discharge of blood, but a venous oozing continues, which is increased by closing up the wound, and putting on a bandage. Should they fail, however, dossils of lint, dipped in a hot saturated solution of alum, applied to the bleeding surface, and leaving the limb exposed in a current of cool air, will, generally, succeed. It is useless to attempt to obtain union by the first intention in cases of this description; for if, after some hours, when the danger of hæmorrhage has ceased, the edges of the wound are brought together, and the usual dressing applied, it gene-

rally happens that at the end of three or four days the stump becomes gangrenous. Gangrene following amputation in old and enfeebled constitutions is generally fatal, and we should, therefore, endeavor to avert it by the immediate use of proper local stimulants, and by sustaining the constitutional powers with an invigorating course of treatment. Pressing the surface of the stump with pledgets of lint, dipped in warm elemi ointment and turpentine, soon excites healthy suppuration, and an abundant growth of florid granulations, and, at the same time, the steady use of opium, carbonate of ammonia, wine, and nutritious broths, must be persisted in.—*Lond. Med. Times.*

OBSTETRICS AND DISEASES OF FEMALES.

28. *Singular Case of Pregnancy.*—A peasant girl, aged 15, after a violent effort, found a pain in the loins, which always increased after fatigue. Three years afterwards she perceived one day a round body, which projected from the labia pudendi, but repose and the horizontal position easily effected its reduction. She mentioned it to no one. She was married at 20, and became pregnant two years afterwards. When she had reached the seventh month she felt great pain on account of the pressure which the displaced uterus exercised on the neighboring parts. The term of pregnancy having arrived, and the pains commencing, an ignorant midwife kept her for four days without employing any means for terminating her labor. M. Perfetti being at last called in, and seeing the uterus hanging out between the thighs, dilated the cervix uteri by means of two incisions of about sixteen lines long, one in the anterior lip, the other in the posterior. The accouchement and expulsion of the placenta were then accomplished without difficulty. When the womb was emptied it was reduced. Then, inflammatory symptoms having disappeared under proper treatment, an elastic gum pessary was placed permanently in the vagina. For the last ten months she had no return of the prolapsus.—*Braithwaite's Ret., from Bulletin delle Scienze Midiche, and Gaz. Med.*

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29. *Case of Bi-Partite Vagina; with Spontaneous Rupture of the Septum and Natural Delivery.* By Dr. Vinchon.—In August, 1842, I was called by a midwife to examine the genital organs of a primipara, who had been in labor from one evening to the next. The head, which was in the first position, was far down in the pelvis; and on a cursory examination, everything gave promise of a speedy and favorable issue; but in carefully examining the vagina, a thick septum was detected, stretching vertically between the recto-vaginal partition, and the urethro-vaginal wall, beginning on a level with the posterior commissure of the urinary meatus, and terminating about two inches beneath it. The vagina was thus divided into a right and left canal. The mouth of the womb was quite free, because, at the end of the septum, the vagina was single. The anormal condition just described gave rise to no inconvenience in sexual intercourse, as the penis could be introduced indiscriminately into one or other canal. The finger could be put in at one opening, carried round the septum, and brought out at the other.

As labor was advancing slowly, and the septum could at any time be prevented from impeding delivery by snipping it across with scissors, I satisfied myself by administering ergot of rye, and watching to see what nature would do. The head was neither directed to one side nor the other of the septum, which by the force of the uterine contractions, was made to appear like a band across the head, in thickness similar to the umbilical cord. As the expulsive force increased, the band became thinner: from the absence of blood, and the effects of tension, it was rendered white like a ligament. Our intention now was to destroy this obstacle by cutting it through; but nature was more alert. All at once the membrane snapped across towards the anterior commissure of the vulva, yielding a noise resembling the slight crack of a whip, whereupon the head immediately came forth, and a healthy child was soon born. The portion of membrane attached to the posterior commissure was cut off with scissors.—*L'Experience, 11th April*, 1844.

30. STATISTICS OF MIDWIFERY.

Dr. F. H. RAMSBOTHAM has lately published in the *Medical Gazette* a series of Reports of the Cases delivered in the Eastern district of the Royal Maternity Charity under his superintendence. We present our readers with the most interesting portions of these Reports, in a tabular form :—

Year.	Number of Cases.	Twin Births.	Proportion of ditto.	Presentation of the Twin Cases.					Sexes of Twin Cases.			Sex, Presentation, Complications, &c.																	
				Both Heads.	Head and Breech, or Inferior Extremities.	Both Breech, or Inferior Extremities.	Breech and Shoulder.	Head and Shoulder.	One with Head, the other transversely.	Both Males.	Both Females.	Different Sexes.	Males.	Females.	Some part of Head.	Of Face.	Breech, or Inferior Extremities.	Transverse Presentation.	Children born alive.	Still born Children.	Implanted Placenta over Os Uteri.	Flooding before Delivery; no Implantation of Placenta.	Flooding after Delivery.	Premature Delivery induced.	Rupture of Uterus.	Died from Puerperal Causes within a Month.	Puerperal Convulsions.	Delivered by Craniotomy.	Delivered by Forceps.	Placenta retained by Atony, or Irregular Contraction.	Complicated with Longitudinal Laceration
1833	2619	22	1 in 119	6	15	1	—	—	—	9	6	7	1372	1269	2437	12	64	4	2556	85	2	5	9	3	—	16	5	3	—	18	—
1834	2447	26	1 in 94	13	9	1	1	—	2	7	8	11	1285	1188	2408	17	57	8	2408	79	1	5	6	2	—	10	2	—	4	10	—
1835	2311	16	1 in 144½	8	4	3	1	—	—	3	6	7	1229	1098	2437	8	57	7	2241	86	3	7	5	1	—	7	4	1	3	8	—
1836	2268	22	1 in 103	4	15	2	—	1	—	6	9	7	1150	1142	2215	8	73	4	2202	90	8	3	4	2	—	8	1	—	2	8	—
1837	2140	26	1 in 82½	12	11	1	2	—	—	7	8	11	1085	1081	2113	10	40	13	2079	87	3	10	1	1	1	13	3	2	3	16	—
1838	2136	25	1 in 85½	11	9	5	—	—	—	5	8	12	1115	1046	2087	7	68	6	2076	85	1	6	4	1	2	9	—	—	3	11	—
1839	2079	18	1 in 115½	9	6	1	—	2	—	4	9	5	1082	1015	2044	—	48	5	2012	85	5	7	—	—	—	9	1	2	3	14	—
1840	2173	27	1 in 80½	11	14	2	—	—	—	11	7	9	1144	1056	2131	9	60	9	2120	80	10	10	—	—	—	8	1	4	6	9	—
1841	2167	27	1 in 80¼	—	8	1	—	—	—	13	10	4	1124	1070	2143	—	44	7	2107	87	1	10	—	1	1	6	—	5	—	16	—
1842	2090	20	1 in 104½	10	8	2	—	—	—	7	2	11	1076	1034	2068	—	40	2	2041	69	4	11	3	1	1	11	1	3	1	9	1
1843	2002	23	1 in 87	15	6	1	1	—	—	10	6	7	1037	988	1977	8	42	6	1953	72	1	6	8	—	1	11	—	4	7	7	—

31. *Uterine Diseases.—Mechanical Dilatation of the Cavity of the Os and Cervix of the Uterus, as a means of Diagnosis and Treatment, in some affections of that organ.*—Professor Simpson first showed the difficulty which exists in ascertaining some of the morbid conditions of the lining membrane of the cervix and cavity, in consequence of the small size of the normal opening into the organ. He pointed out that this opening may, by the use of a succession of *sponge-tents*, be enlarged to such a degree as to overcome, in a great measure, this difficulty. The kind of sponge-tent which Dr. S. has used, is made in the manner of that described in most old works of General Surgery. The pieces are pyramidal, of various sizes, and have a perforation in their base, to allow of their being temporarily fixed upon a curved wire or bougie, for their ready introduction into the os uteri. The bougie is withdrawn as soon as the sponge is lodged, and in a few hours the latter expands immensely in size. Previous to its introduction, a string is attached to the tent to allow of its easy withdrawal. Under the expanding power of the tent, the cavity of the os and cervix uteri may be dilated, and without any suffering to the patient, to such an extent, as to allow the finger to pass a sufficient distance for the purpose of ascertaining various points of diagnosis which could not otherwise be arrived at. Dr. Simpson stated that he had employed the same means to facilitate some kinds of remedial and operative interference in this part of the body, such as the removal of those small vesicular polypi that are so frequently clustered upon the interior of the cervix.

In speaking of dilatation of the os and cervix uteri as a means of cure, Dr. Simpson pointed out the results of this practice in the hands of the late Dr. Mackintosh in the cure of dysmenorrhœa and sterility, connected with normal and inflammatory strictures of the os uteri. His own results had not been so successful as those of Dr. Mackintosh; but he had now seen a considerable number of severe cases in which dysmenorrhœa that had previously resisted all other kinds of treatment, had at once yielded to the mechanical dilatation. Dr. Simpson had found the stricture occasionally at the os internum, or opening between the cavities of the cervix and body, and not at the os tincæ. Dr. Mackintosh had effected the dilatation with long straight bougies of different sizes. Dr. Simpson had found them more easily used when slightly curved. He also showed other instruments, one of them like the dilator for the female urethra, which he had occasionally employed for this purpose. These instruments were all of them intended to be left in the os uteri for only a short period, and their introduction repeated from time to time, as in the usual treatment of stricture of the urethra in the male. Latterly Dr. Simpson had in his practice thrown aside these, and used another form of permanent bougie for this purpose, and he considered them to be greatly preferable. These permanent bougies were made of Berlin silver, the stem or part included in the uterine cavity was two inches and a quarter in length, the lower ends, which rested in the vagina, were bulbed and enlarged to the size of a large almond, and were perforated below for the purpose of being placed on a temporary handle, used in the introduction. One of the instruments was left in the uterine cavity for three or four days, and by that time the part was so much relaxed, that another of a much larger size could, in general, be easily introduced. They could easily be borne without the slightest inconvenience, and, indeed, without the patient being aware of their presence. Dr. Simpson pointed out that this permanent form of bougie altogether gave much less pain to the patient and less trouble to the practitioner; was more certain and expeditious in its effects, and was especially useful when the surrounding tissues of the lips and cervix were in any degree indurated. Obstructed dysmenorrhœa sometimes depends on other circumstances than ordinary strictures of the os. It is sometimes seen in connection with the conical hypertrophy and elongation of the cervix. Dr. Simpson has found it in several instances accompanied with much morbid thickening of the anterior lip of the os uteri, the posterior lip being thin and healthy, and the os stretched out between them of an irregular crescentic shape. In such, and other instances, Dr. Simpson had divided the os uteri on each side to the extent of a few lines with a very narrow knife or "*lithotome cachée*," and subsequently kept the part temporarily dilated with the sponge-tent. He quoted cases of the perfect success of this simple and

safe measure; it placed the parts in something of the same condition as that which they present subsequent to miscarriage; and this latter occurrence is known in general to leave without dysmenorrhœa those who have previously been laboring under that affection, whilst at the same time, women after aborting usually soon again become pregnant, there being no such great lacteal determinations to the mammæ as occur after parturition at the full period, and which seem then usually to interfere with the early repetition of conception.

Lastly, Dr. Simpson offered some observations on the introduction of the sponge tent, into the os of the pregnant uterus, in certain conditions in connection with abortion, and as a means of inducing premature labor. When abortion was inevitable, and the hæmorrhage great, a small expanding sponge tent passed into the os uteri, was more effectual than a large vaginal plug. It at the same time opened up the os uteri, so as to allow of the more easy escape of the contents, whilst uterine contractions were, in most instances, ultimately induced by its presence. For the same reasons it was often a valuable means of both opening up the os uteri, and exciting the necessary degree of uterine action in those occasionally perplexing cases where, in abortion, the embryo escapes, but the secundines are long retained. Dr. S. had employed the same simple means in inducing premature labor, and spoke of the advantages of it in comparison with the various other measures that had been proposed for that object. He found that the tent, when made and introduced in the mode already stated, required no vaginal plug, or other means to hold it *in situ*. By its use the first stage of labor, or the dilatation of the os uteri, could, in a great degree, be advanced, before the labor itself actually began.—*Lon. and Edin. Monthly Journal.*

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32. *Effects of Ergot of Rye on the Fœtus in Utero.* By T. E. Beatty, M.D., M.R.I.A., Fellow of and Professor of Midwifery to the Royal College of Surgeons in Ireland, &c., &c., &c.—Dr. Beatty thinks, with many other respectable practitioners, that ergot of rye produces a noxious influence on the nervous system of the infant during parturition; and to this effect may be attributed its fatal tendency in many cases, independent of the asphyxia which is evidently produced in other cases by the continued and uninterrupted action of the womb for a certain length of time. Dr. Beatty relates a number of cases, and concludes that in most cases, if the labor be accomplished within *two hours* after the exhibition of the medicine, the bad effects on the child will not be seen; on the contrary, when the time exceeds two hours, the danger to the child will be great. "The effects are certain spasmodic conditions of the muscles of the whole body, alternating with relaxation or palsy, and accompanied by evidences of derangement of the functions of the cerebro-spinal system," produced, according to Dr. Beatty's opinion, by "a direct poisonous effect on the infant before delivery." After relating a number of cases to elucidate his opinions, Dr. Beatty says—

In the cases just recorded, the condition of the infants was very unlike that of still-born children delivered under ordinary circumstances, and when no ergot had been administered to the mother. *The distinguishing characteristics are, the general lividity of the surface, the universal rigidity of the muscular system, producing the stiffened limbs and clenched hands in those infants in whom life was extinguished; and the remarkable kind of alternating spasm and palsy which supervened in those that were resuscitated.* The nearest approach to this state in new-born children, and that which most resembles it, is the condition in which children are born dead, with symptoms of congestion of the cerebral vessels, in whom, it is true, we find the countenance suffused and livid, but the peculiar affection of the muscular and nervous system is wanting. Children presenting this appearance of congestion are usually born after difficult labor; but in the instances above detailed this was not the case, some of them were tedious, but none of them difficult.

That the *fœtus in utero* is capable of being influenced by the circulating fluids of the mother, is proved by the well-known fact, of the communications of syphilis, small-pox, &c., to the unborn child; and that substances taken into the stomach of the mother can affect the infant, is shown by the experiments of

Majendie, who found in the fœtus of animals the odor of camphor, and the color of madder, with which he had fed the mother. It is still further established by the case reported by M. D'Outrepont, of a fœtus poisoned by opium taken by the mother.

Admitting this point to be established, it remains to be seen, whether the effects described above, and imputed to the direct agency of the ergot of rye, bear any resemblance to the effects produced by the introduction of this drug into the circulation. Upon this point we have very satisfactory information in the elaborate essay of Mr. Wright, already alluded to. Before proceeding to recount the results of his experiments, he takes notice of some of the epidemics of *spasmodic ergotism*, caused by eating bread made of rye containing a large portion of ergot, which visited different parts of the Continent during the last century. This disease almost devastated Freybourg, and overran many of the Cantons of Lusatia, Saxony, and Sweden. According to Videlius, the patients were attacked with spasms and convulsions, accompanied with violent pains, which were said to equal those of luxation, and to be similar in their type. In some instances the patients became lethargic, and when recovering from such state gave respectively signs of stupidity, intoxication, and extreme lassitude, after which the fit subsided for a time. But there generally remained vertigo, *tinnitus aurium*, *nebulæ oculorum*, rigidity of the members and excessive feebleness.

The effects of this medicine, when introduced into the circulation, may be learnt from the experiment of Mr. Wright.

It is plain that the longer the time that elapses after the medicine has been taken into the stomach of the mother, the more certainly will its noxious principles be absorbed and mixed with her blood, the more certainly also will these principles be transmitted to the fœtus by the constantly arriving current of blood through the umbilical vein, and the more likely will the fœtus be to suffer from their effects. From these observations I think we are justified in coming to the conclusion, that the administration of ergot of rye to a woman in labor is attended with danger to the child, whenever a time sufficient for the absorption and transmission of its noxious properties elapses before the child is born; and from the cases above stated I am inclined to place two hours as the limit of safety, and to consider a prolongation of labor beyond that period as perilous to the infant. —*Dublin Journal of Medical Science, May*, 1844.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

33. *On Poisoning with Sulphate of Iron, by* Dr. Christison.—The author commenced with observing that sulphate of iron, under its vernacular name of copperas, was long thought to be an active poison; that in recent times, however, it had been found in medical practice that considerable doses could be administered without injury; that experiments on animals by Gmelin tended to prove it to be nearly innocuous to the lower animals; but that the latest inquiries—those of Smith and Orfila—showed that it is an irritant poison of no small energy, if it be retained long enough in the stomach.

He then gave an account of a medico-legal case of recent occurrence, which, along with physiological experiments instituted on the occasion of it, illustrates the accuracy of the view of the last mentioned author, and proves that the sulphate of iron is a poison active enough to occasion death in the human subject. A child, four years of age, having died in circumstances which excited strong suspicions of poisoning, an investigation was made by the law authorities nearly four months afterwards. It appeared that the child, previously in good health, was attacked with violent vomiting and purging immediately after breakfast, and died in the course of the afternoon of the same day. The person suspected in the case was proved to have purchased both sulphate of copper and sulphate of iron not long before, and was seen by other children in the house to mix a blue liquid with the porridge, which the child took for breakfast, and also to give for drink after the symptoms began, a liquid of blue color, made by dissolving a saline

substance in water. Copper was naturally suspected. Mr. Dewar and Dr. James Dewar, of Dunfermline, who conducted the medical investigation, were naturally led to look for copper in the alimentary canal. There was none found, either by them or, subsequently, by Dr. Christison, who also analysed the contents and textures of the stomach. But there was obtained a large quantity of iron, partly in the soluble condition, but chiefly in the form of a compound insoluble in water. This appeared, in a great measure, to be sulphate of iron, formed by the decomposition of the sulphate through means of the sulphuretted hydrogen and ammonia disengaged during the decay of the body, for water, which had acted on the contents and textures of the alimentary canal, presented evidence of a much larger quantity of sulphuric acid than would have arisen from the ordinary contents; and the whole course of the mucous coat, from the mouth to the anus, was thickly lined with a layer of jet-black mucus. The tissues of the stomach presented everywhere the same color. Iron was also found largely in numerous brown stains on the child's clothes, and on an apron worn by the person suspected to have administered the poison. The Messrs. Dewar made some experiments with sulphate of iron, from which they came to the conclusion arrived at by Orfila and Smith, viz.: that two drachms retained in the stomach by a ligature on the gullet will cause death in a few hours.

It appears, then, that sulphate of iron may cause death; that if the body be buried some months before being examined, the iron, as in the case of arsenic in similar circumstances, becomes united with sulphur, and that the color of the contents and tissues of the stomach is thus changed to a deep black. The process employed for detecting the iron consisted in incinerating the contents and textures, acting on the residue with the diluted nitric acid, aided by heat, adding an excess of ammonia, and transmitting sulphuretted hydrogen. The ammonia separates a yellowish precipitate of sesquioxide of iron, and does not render the liquid blue, if there be no copper. The sulphuretted hydrogen then produces black sulphuret of iron.—*Cormack's Journal* and *Chemist.*

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34. *Injury to the Spinal Cord during Hanging.*—Mr. Campbell de Morgan describes the appearances after death, presented by the body of a woman who committed suicide by hanging, she having been previously laboring for a long period under scirrhus uteri, which had ulcerated into the cavity of the peritoneum, and induced inflammation. There not being any indications of dyspepsia or congestion, the spinal column was examined. There were ecchymoses about the deep muscles over the second and third cervical vertebræ, and also in the sheath of the spinal marrow, at a part corresponding to the external injuries. At the left side and exterior of the sheath was an extensive effusion of blood, firmly coagulated. The spinal marrow having become generally softened, it was impossible to ascertain the existence of any particular softening at this part: there was not any appearance of bruising of its texture. The odontoid process was firmly retained in its place, none of its ligaments having given way, nor were there any marks of fracture of the vertebræ, nor of laceration of their ligaments, but there was an unusual degree of mobility between the third and fourth vertebræ, as though the ligaments had been stretched. The head was not examined.—*London Medical Times.*

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35. *Prussic Acid.*—The following testimony was given on the trial of Belany for the murder of his wife:

Dr. LETHEBY.—"I have made numerous experiments with prussic acid upon the lower animals. The first effect which the administration of prussic acid produces upon the lower animals is the appearance of a peculiar giddiness, of a disposition to run round, as if the head was affected; then the respiration becomes irregular; subsequently there is a scream. Perhaps before that scream is uttered the animal drops, at the same moment, after two or three violent respiratory efforts, which produce a cry, a shriek, or a scream; convulsions follow, with foaming at the mouth; and in a longer or shorter time, according to the quantity of the acid administered, death ensues. I have not had an opportunity

of seeing its effect on the human subject. After the shriek or scream, all sensibility and volition cease. In my judgment, a person after giving that shriek would not be able to walk or converse."

Dr. THOMSON.—"The effects of taking it are those which have been so clearly explained by the last witness: giddiness, faintness, convulsions resembling those of tetanus or lock-jaw, and screaming. When the symptoms have advanced to a scream, the powers of volition are gone. After the scream it would be impossible for a party to talk, so as to describe what had happened."

The evidence which we have just adduced, founded chiefly upon experiments made on the lower animals, could not fail to make a stronger impression on the minds of professional men than on those of persons unacquainted with medicine and the action of poisons. To us, well initiated in these subjects, the prisoner's statement appears wholly unsatisfactory and improbable, [that on forcing open the bottle he had spilled the prussic acid in the room, and that a small quantity had been put in a tumbler which had been accidentally drunk;] but we are not surprised at the judge, after pointedly inquiring of the medical men examined, whether they had ever witnessed a case of poisoning by prussic acid, and receiving a negative reply from each of them, observing to the jury, "The medical men had told the jury, that with the scream that was spoken of all volition and power of speech would cease; but then it must not be forgotten that the judgment of these gentlemen must be tempered with this caution, that none of them had ever witnessed the effects of prussic acid on the human body;" a hint sufficient to impair in no slight degree the weight of evidence, which we have reason to believe was not given without the most anxious and careful consideration of the subject.

In further proof of the improbability of the prisoner's statement, was adduced the striking circumstance, that the landlady and servant who entered the small room in which the deceased lay, detected no peculiar smell, although, if his account be true, some acid was poured into a tumbler, and left for a few minutes in the room. Dr. Thomson stated, "the smell of prussic acid is very peculiar. If any be spilled in a room the odor remains a considerable time, unless there is much movement in the air of the room. If it were in a tumbler the odor would be strong—if it were lifted to the top the odor would be perceived." We have tried the experiment; we have poured a small quantity of the acid (Scheele's preparation) into a tumbler, and after leaving it for five minutes in a small room, have entered the chamber, and we could scarcely believe it possible that any one possessing the ordinary sense of smell could fail to notice the remarkable odor pervading the apartment. We think, then, the absence of all odor of the acid strongly corroborative of the other points which impugn the truth of the prisoner's statement. Had the poison been mixed with the solution of Epsom salts in the adjoining room, carried into the bed-room, and immediately swallowed by the deceased lady, scarcely any smell would have arisen.

There is one point in Dr. Letheby's evidence, which, we think, was either not rightly understood, or not quite rightly used. In his cross-examination by Mr. Erle, he states, "prussic acid is one of the easiest poisons to detect after death." Now, whilst we admit that this is the case *immediately* after death, we know that prussic acid both evaporates so quickly, and so readily suffers decomposition, that we much doubt whether it could be detected in the stomach, even at the end of a few days after death. At any rate, arsenic, the mineral acids, and many other poisons, if not more easy of detection than prussic acid, are yet more permanent, and to be detected after a much longer period. Dr. Letheby probably did not perceive the bearing of the question put to him, and therefore did not answer it in a way that was calculated to elicit the truth. His reply, at all events, was made a point of by the judge, who in his charge certainly omitted no circumstance which could tell in favor of the prisoner; but desired the attention of the jury to it particularly, as it was unlikely that a medical man, contemplating the circumstance of murder, would have selected for his purpose "one of the poisons most easy of detection." We think that he who has knowledge of poisons would select that which he knows to be most speedy and most certain in its operation; which produces sudden death, and whose effects to ignorant bystanders

would look like what they conceived to be a "stroke," or a disease of the heart, when told so, that disease being rendered the more likely by family predisposition: a momentary struggle, and six feet of cold earth to make all snug, would be the prisoner's maxim; and prussic acid, backed by the Eastern Cemetery, are the precise elements required.—*London Medical Gazette.*

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36. *Arsenic.*—Five individuals were lately poisoned by *arsenic*, contained in some well-water near Vienna. A large quantity of cobalt ore had been lying in a yard in which the well stood, and partly by exposure to air, partly by rain-water, the ore was decomposed, and yielded its arsenic to the well-water. The patients complained of an inclination to vomit, acute pains in the stomach and bowels, burning sensation in the throat, slight fever, thirst, exhaustion, &c. After the use of almond-milk, hot fomentations, and cataplasms, acetate of morphia, and repeated doses of the hydrated peroxide of iron, they soon recovered.—*Takresbericht über die Fortschrette der Gesammten Medicin.*

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37. *Antidotes for Arsenious Acid.*—Before Bunsen's discovery, lime-water, hydrosulphuric acid, &c., were used. It has since been shown that—1. A very great quantity of hydrated oxide of iron is necessary for the neutralization of arsenious acid. 2. This combination is innocuous, and easily dissolved by the acid of the gastric juice. 3. That the *crocus martis aperitivus* (dry hydrated oxide of iron) may be substituted for the jelly-like hydrate. The following experiments were made by Sandras, to determine which are the most efficacious antidotes:—1. A small but healthy dog received, in a piece of meat, three grains of powdered arsenious acid; the œsophagus was tied with a ligature, so as to prevent vomiting: death took place during the night. Some submucous ecchymoses were found in the stomach. The spleen and the liver presented considerable traces of arsenic; the blood but little altered. 2. A large, healthy dog received the same quantity of arsenic, and immediately after 350 grains of the hydrated oxide of iron were injected into the stomach. No symptoms of poisoning appeared. 3. A large, lean, strong dog received, in some meat, three grains of arsenious acid, and afterwards a quantity of the *crocus martis aperitivus*, dissolved in water, was injected into the stomach. The œsophagus was tied with a ligature; no symptoms of poisoning appeared, but the dog succumbed from the consequences of the operation. 4. A healthy hunting dog swallowed three grains of arsenic in meat, and immediately after 560 grains of the oxide of iron were dissolved in 1,260 grains of water, and injected into the stomach, and then a ligature was applied to the œsophagus. The dog died on the fifth day, with symptoms of purulent phlebitis, without any phenomena of poisoning by arsenic. 5. Another strong hunting dog received the same quantity of arsenious acid in meat, and then two table-spoonfuls of moist sulphuret of iron, likewise mixed with food. The œsophagus was tied with a ligature. Strong inclination to vomit manifested itself, with much white foam. After four hours these symptoms disappeared, and the dog remains well. 6. The same experiment, once more repeated, showed no symptoms of poisoning; but the dog died, on the 6th day, through hæmorrhage. 7. In another dog, where the sulphuret of iron was not given till forty minutes after symptoms of poisoning appeared, the animal died in twenty-two hours. From these experiments it was concluded, that hydrated oxide of iron and moist sulphuret of iron are the best antidotes for arsenious acid. Sulphuret of iron is perhaps preferable, inasmuch as it may be given, even where the nature of the poison is not determined; for, besides arsenious acid, it also decomposes corrosive sublimate (bichloride of mercury), salts of copper and of lead. As to the form in which the antidote is to be administered, that of jelly is the best. It is considered useful to give a few glasses of warm water soon afterwards, and to tickle the throat in order to promote vomiting. To one grain of arsenious acid, 120 grains of moist hydrated oxide of iron and 80 of the dry *crocus martis* are necessary.—*Ib.*

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38. *To Discover Arsenic.*—The following method is employed by Duffos and Hirsch:—If no poison is to be found in substance, and sulphuretted hydrogen can-

not be directed on the mass, solid pieces of the organ are to be cut, and then digested with muriatic acid in a tubulated retort. After the tube has been well closed, the mass is to be distilled in a bath of chloride of calcium, till the contents of the retort begin to thicken. The portion that has passed over into the receiver is then to be taken away, and on the residue left in the retort rectified alcohol is to be poured, and then filtered. The alcohol is then to be distilled off, and the residue mixed with that previously taken from the receiver. Sulphuretted hydrogen is then passed into the liquid, which is then to be left quiet for some time, till the disappearance of the smell of hydrosulphuric acid, and then filtered. The sulphuret of arsenic remaining on the filtering paper is then to be acted on by warm ammonia, evaporated, mixed with nitric acid, and finally dried in a sand bath. The residue is mixed with six times its weight of subcarbonate of potass, and reduced in a proper apparatus by pure hydrogen gas: the metalic arsenic will be sublimed in the cold part of the glass tube.—*Ib.*

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39. *To discover Arsenic in the Secretions.*—A series of experiments were instituted by Meurer on a young horse three years of age, to which, for seven consecutive days, a bolus was administered containing fifteen grains of arsenious acid. The urine evacuated six hours after the first dose, and that evacuated fifteen hours after, gave no trace of arsenic. It was not till thirty-six hours after the first dose (six hours after the second one) that a trace of arsenic could be found on the evaporation of eighteen ounces of urine. A little more was found in the excrements on the second day. After continuing the poison for seven days, no more than two or three spots of arsenic, of a metallic brilliancy, could be obtained from the urine and excrements. After the administration of the arsenic ceased, distinct traces of the poison could be discovered in the excrements, but none in the urine. Meurer employs the following method to reduce the organic substances which are to be subjected to analysis:—1. To reduce the uncoagulable organic liquids, he uses chlorate of potash with muriatic acid. 2. In solid substances, as the fæces, the soluble parts are best extracted by caustic potash, and then chlorine is to be passed through the liquid, or they are to be acted on by boiling nitric acid. 3. If the arsenic is entirely combined with the organic mass, as the brain, the liver, &c., the mass is to be incinerated by nitric acid.

To distinguish arseniuretted from antimoniuretted hydrogen, Meissuer exhibited some experiments, the results of which are—Arseniuretted hydrogen passed through an alcoholic solution of potash, soda, or ammonia, produces no change; whilst the antimoniuretted hydrogen soon darkens the solution, and throws down black flakes.—*Ib.*

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40. *Comparative Weight and Length of the Fœtus at the Full Time.* By Dr. C. L. Elsbæsser, of Wurtemberg.—In 1000 children he found

13	weighed	from	4	to 5	pounds.	318	weighed	from	7 to 8	pounds.
58	"	"	5	to 6	"	83	"	"	8 to 9	"
17	"	"	6	to 7	"	11	"	"	9 to 10	"

The average weight to be deduced from this is 4 lbs. 28 *loth* (or half ounces). The lightest child weighed 4 lbs. 23 loth, and the heaviest, 9 lbs. 30 loth. [M. E.'s results differ somewhat from those of other authors; for example, M. de Lachappelle met with one child at the full time weighing 3½ lbs. Chaussier, in 1601, found 3 weighing 2 lbs., 31 of 3 lbs., and 97 of 4 lbs., and he also observed others weighing 11, 16, and 17½ lbs. We think, however, with M. E., that these statements of Chaussier ought to be received with a due degree of caution; such cases certainly present very rare exceptions to the general rule.] M. E. found that

The	average	weight	of 100	males	was	7	lbs.	0½	loth.
"	"	"	"	females	"	6	"	21	"
The	maximum	weight	of the	males	"	9	"	30*	"
"	"	"	"	females	"	10†	"	—	"
The	minimum	weight	of the	males	"	4	"	28	"
"	"	"	"	females	"	4	"	19	"

* In several cases. † In one case only.

Of 200 children

The length in	11	was from	15	to	16	inches.	
" "	99	" "	16	to	17	"	
" "	75	" "	17	to	18	"	
" "	14	" "	18	to	19	"	
" "	1	" "	19	to	20	"	

The average length of	100	males	was	17 inches	3½ lines.
" " " "		females	"	16 "	8 "

The maximum length of the males among 1000 children was					19	inches	17	lines.
The maximum among the females	"	"	"	"	19	"	1	"
The minimum among the males	"	"	"	"	14	"	15	"
The minimum among the females	"	"	"	"	14	"	9	"

There is therefore a difference in length, as well as in weight, in favor of the male children.

M. E. has also directed his attention to the comparative lengths of the supra and infra-umbilical portions of the body. His observations disprove the statements so confidently put forth by some, that in the child born at the full-time, the umbilicus is the central point of the body.

In 200 children the length of the supra-umbilical portion of the body was

In the males 9 inches 2½ lines.
" females 9 " 0 "

The length of the infra-umbilical portion was

In the males 7 inches 9 lines.
" females 7 " 7 "

The difference of length between the two portions was

In the males 1 inch 3.40 lines.
" females 1 " 3.57 "

In one case the infra-umbilical portion was 3 lines longer than the supra-umbilical; in another (*one only*) they were exactly equal. M. E. has also ascertained, that the distance from the ensiform process of the sternum to the umbilicus, is generally about one inch longer than from the umbilicus to the symphysis pubis. The author also concludes from his observations, that variations in length are much less than those in weight, the former being : : 15 : 20, but the latter : : 5 : 10.—*Henke's Zeitschrift für die Staats Arzneikünde, No.* 42, *tom.* 4, *as quoted in Northern Journal of Medicine, for June*, 1844.

[The Wurtemberg pound is equal to 2.0314 English avoirdupois, and the inch is equal to nearly .94 of an English inch.]

41. *Poisoning by Ornamental Sugar.*—The substance with which the poisonous sugar was taken, was a pudding of the simplest kind, composed of eggs and flour. It would be difficult to state the quantity used by each individual, but as the sugar was so strongly impregnated with the verdigris, a small quantity only would be required. There were five persons in the establishment who took more or less of it. The chamber and kitchen maids were the first to be affected (probably from their using it more liberally); they became sick in about a quarter of an hour. The most prominent symptoms were, severe headache, succeeded by vomiting and purging. After these had in a measure subsided, tympanitis supervened, which in one case was very distressing, her abdomen becoming tense as a drum, which, however, was not very long in subsiding. Associated with the above, was the copper-like taste in the mouth, followed by severe numbness of legs and arms, accompanied with great trembling, especially of the hands, which incapacitated them from holding anything with safety. A little girl, about ten years of age, and who, evidently, had not taken so much of the noxious substance, was not attacked till the next day, when similar symptoms came on, but not in such an exaggerated degree, as in the above cases. But another little girl, who had taken more of it, was very severely affected with all the symptoms, especially the vomiting and purging.

The nurse, an old person, was the last to show the effects; probably she might not have got so much as the former, as she was not affected till the third day,

when symptoms similar to the foregoing, but not in such an aggravated degree, came on. Her convalescence, as was to be expected, was more tardy than with the rest, which might be accounted for by her advance in years.

It would be supererogation here to remind medical men, of the duty they owe to their lay brethren, in impressing them with the injurious effects of many of those things which at present disgrace the festive board. No doubt they would often have to speak in vain; but I would hope the day is not far distant, when our rulers will give more care than at present, to the dietetic welfare of the people.—*Lond. Med. Times.*

MISCELLANEA.

42. *Pension to the Widow of Sir Charles Bell.*—Sir Robert Peel has had the widow of this distinguished surgeon placed upon the pension list, and the lady has now an annuity of £100. Lady Florentine Sale, the wife of the hero of Jellalabad, also receives a pension of £500. There is no objection to this. But why should those who have devoted their whole life to the business of discovering the best method of relieving human suffering and of prolonging human existence, be placed so far below those whose occupation is the very reverse? A grudging compensation is their reward during life, and a beggarly pension is the occasional expression of a nation's gratitude, for untiring self-devotion to the cause of science, and the acquirement of a reputation which the country is ever ready to claim as a part of its own, and which for years to come will be contemplated with pride by the intelligent patriot.

43. *Necrology.*—Dr. Haslam, the well known writer on insanity, died recently in London, at the age of 81 years. He commenced his professional career in the Bethlehem Lunatic Asylum, in the year 1795. His contributions to scientific literature consist of "Observations on Madness and Melancholy," published in 1798, "Sound Mind," published in 1819, and lectures on the "Intellectual Composition of Man," published in 1828.—*Amer. Journ. of Insanity.*

44. *Psychological Medicine.*—Professor Otto has lately written on the "Action of different Medicines on the Mental Faculties." He says that ammonia, opium, musk, castor, wine, æther, and the preparations of gold, enliven the imaginative powers, and render the mind more fertile and creative; while the empyreumatic oils, iodine, arsenic, belladonna, and conium, are apt to induce a tendency to melancholy.—*Ibid.*

45. *On the Clothing of Soldiers.* Extract from an article on Military Hygiene, by Frederick Roberts, Esq., Assistant-Surgeon 59th Regiment.

"The circumstances under which I believe the present mode of dress of soldiers to act most destructively are when the men are already laboring under organic disease; and when once organic derangement is established, I consider them to be of all others the most difficult afterwards to protect from a recurrence of attacks, and from extension of disease. A man with pleuritic adhesions, deposition of tubercles at the apices of the lungs, or with thickening of the mucous membrane of the bronchial tubes, encased in tight uniform, with cross-belts and knapsack, must suffer from want of due expansion of the chest; the respirations must make up in rapidity and frequency what the lungs want in capacity. The respiration becomes *puerile*, and tubercles are quickly deposited, or, if already present, their rapid softening follows.

"The anatomy and functions of the skin have been made the subject of much research by modern physiologists, who have demonstrated that it has a very important part to perform, both in the animal and vegetable kingdom; that it is a powerful auxiliary to the lungs in oxygenising and in vivifying the blood, and an extensive emunctory by which the fluid materials that have performed their duty in the economy are eliminated. The importance of its being kept continually

in a clean and perfectly free state, in order that it may be able to perform these various functions, has been vividly felt by scientific writers, and has been equally vividly expressed by them.

"The condition of the soldier is such, although he practises certain evolutions in the course of the day and week, as to be unfavorable to due performance of the functions of the skin. It is familiar to all that retention of clothes on the person for a long time favors the accumulation of dirt thereon. The cause of this is, probably, the want of proper circulation of air round the body to promote the evaporation and dissipation of the cutaneous secretions. On guard, the soldier retains his clothes for two days and one night, with little variation. When confined in the guard-room for misconduct, he remains without change for periods varying from twenty-four to seventy-two hours, and probably longer. Indeed, when waiting a court-martial, he is often a week there. The most superficial observer cannot have failed to remark how soon dirt accumulates upon the person of the soldier, whose close-fitting dress prevents the contact of air about his body, and, with what has been advanced above, conduces to irregularity in the function of perspiration. The condition of things termed 'checked perspiration,' said to be produced chiefly by sudden transition from heat to cold, &c., is much favored in the alternations of violent exercise and passive inaction at drill, and on sentry, especially in cold weather. To suppress evaporation, or the physical process of perspiration, extreme humidity, and a high external temperature, are essential; and this condition of atmosphere is found in the sciroc wind in the Mediterranean, and in the torrid zone, where the quantity of vapor contained in the air is much nearer the point of saturation than in the temperate zones, and in consequence of which evaporation is much less than might be supposed from the high temperature. By virtue of this state of atmosphere, again, there is an increase in the perspiration by transudation, which depends upon causes inherent in the living economy, but which may be modified by external agents. Supposing, further, the relative temperatures of the air and of our bodies to be such as to prevent evaporation, there is still here a state of things unfavorable to the healthy condition of the body. According as the sweat becomes abundant, it spreads over the body and forms an external layer, which, intercepting the contact of air with the skin, prevents transpiration immediately from the body. That derangement in the function of perspiration by the influence of physical agents is favored by exposure to relative cold and moisture on sentry, during inspection of men on parades, even during the course of a drill, when not active, and likewise at night, especially during sleep, when the power of regenerating heat is least strong, must be obvious to all.

"Having attempted to show the ill effects of defective clothing upon the soldier's frame, and how little less hurtful it is when wrongly made, I have now, besides what I have suggested should be altered in the articles of dress already in his possession, to propose that the Infantry soldier should be supplied with further articles of clothing. To this I know strong objections will be raised, and amongst others will be the want of capacity of the knapsack (already too weighty) to contain them. It is not the general custom for the Infantry of the line to wear waistcoats and drawers of any material. By the clothing-warrant, the Light Dragoons and Cape-Mounted Riflemen only are ordered to be supplied with flannels; but it is the custom with the Cavalry generally to wear the same, and, indeed, even drawers. In a former part of these observations I expressed a doubt as to the troops at the Cape wearing flannel; the clothing-warrant orders the native corps to wear it, and I have since learned that it is a very general habit among the Infantry to adopt the custom of the colony. In the Infantry throughout the army, it is also more or less worn, either by will or by recommendations of the medical officers.

"The proportion, however, wearing waistcoats and drawers is small, and even this proportion is not invariable in their *constant* use—many throwing them off in summer, and others failing to re-supply themselves when necessary. As these are worn by some, it is reasonable to believe that with little deviation in the disposition of the soldier's kit he might easily be always in possession of a waistcoat and a pair of drawers, or two waistcoats. I have heard that a regiment,

lately arrived from Canada, had in use flannel shirts in the West Indies. This approaches to what I should wish to see adopted, but falls short of many desirable emendations in the physical and material relations of soldiers. Better, then, to fulfil what physiology and the anatomical structure of the frame indicates, under circumstances of the great perversion in the dictates of nature which obtain in the life of a soldier. I think he could be supplied with additional clothing, according as the nature of climate and duty varies, and that the alterations already proposed, or such others as meet the principles implied, should be submitted to experiment. When the circumstances under which the influence of dress falls shall be modified, the causes of disease will also be so far removed. A man will suffer less by remaining in the same clothes for twelve than twenty-four hours; or when exposed to cold on sentry, or elsewhere for an hour, or half an hour, than if he was so exposed for two hours. It is presumed that the soldier's clothing will undergo a change sooner than these circumstances; which, however, are not at all uncontrollable. Though, doubtless, very imperfectly demonstrated, it is supposed nevertheless to be not too much to infer from the foregoing remarks, that were the soldier's clothing more abundant and less opposed to the requirements of nature, did it afford greater freedom of action to the functions of respiration, perspiration, and muscular motion, he might better be preserved from the calamities to which his mode of life exposes him at present; that if experiments were made in his favor upon the principles inculcated, it might be a step toward lessening the power of the destructive influences inseparable from his condition."—*London Medical Gazette.*

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46. *Action of Coneia on the Blood, &c.*—Professor Hunefeld states, in *Simon's Beitrage zur Physiologischen und Pathologischen Chemie und Mikroscopie*, that a very striking change in the blood takes place on the addition of coneia. It is changed into a dirty, reddish-yellow, greasy mass, in which blood-corpuscles cannot be detected by the microscope. The muriate of coneia does not produce this effect. Serum and albumen also coagulate on the addition of coneia, as do creosote, oil of turpentine, oil of bitter almonds, and some other ethereal oils; whilst others, as the oils of rosemary, peppermint, camomile, valerian, petroleum, and citron, are not coagulated, except water be also added, and the mixture shaken. These differences deserve investigation. Coneia, accordingly, deviates from the other alkaloids in these reactions, and approximates, as would be expected, to the ethereal oils.—*Lond. Med. Times.*

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47. *Calculus in the Bladder.*—A case of a very large calculus in the bladder, is reported in the *Medico-Chirurgical Review*, from the Melville Hospital, at Chatham. The patient, a corporal in the Mounted Coast Guard, was under the care of Dr. Rae, deputy inspector; he had suffered for many years from the complaint, and was unable to hold the water for more than a quarter of an hour at a time. On sounding him, a large stone was found, round the apex only of which the instrument could pass; and, examined by the rectum, the finger could neither raise nor pass beyond the stone. When the operation was performed, the stone was found to be of great size, with the thickened coats of the bladder permanently contracted on it. It was found impossible to extract it, the forceps only breaking away fragments from the lower part, and, accordingly, after the patient had been one hour and twenty minutes on the table, the bladder was washed out with warm water, an elastic tube with lint placed in the wound, and he was carried pulseless to bed. Warm punch was administered, and warmth applied to the feet; an anodyne was afterwards given, and in a short time he rallied. The wound was purposely kept open, the stone was occasionally felt, and became looser and less firmly embraced by the bladder. Several kinds of forceps and crushing instruments were employed on other occasions, but failed. After a time, Mr. Fergusson, of King's College, who was attending a lady at Chatham, brought with him two pairs of forceps, lined in their points, and one with a peculiar hinge, with which he had extracted several large stones. On minutely examining the situation and size of the calculus, he was of opinion that it might be extracted, though, probably, with some difficulty. Dr. Rae having requested him to operate, Mr.

Fergusson introduced a pair of his own forceps, and was not long in extracting, although the instrument slipped twice. Several small pieces were removed by the scoop, after which the bladder was washed out with warm water, and the patient, who complained of pain in the back and wound, was put to bed. He had some wine, and a morphia draught at bed-time. Next day, he was free from pain and fever, and ultimately recovered. The stone, including the fragments, weighed eight ounces, and, allowing half an ounce for loss, must have been altogether near nine ounces in weight. It was smooth externally, and composed of circular layers, seemingly of triple phosphate formation, but hard and firm in its interior.—*Lond. Med. Times.*

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48. *Stains of Nitrate of Silver.*—A gentleman in practice, in Westminster, has recently succeeded in effacing the stain produced by a solution of the nitrate of silver on the skin by the combined application of the nitric and hydrochloric acids.

2.

American Medical Intelligence.

The Leprosy in New Brunswick.—This disease has excited much alarm in Quebec, Montreal, and other commercial cities and towns on the shores of the St. Lawrence, and elsewhere. We gave an account of this affection in our last, taken from the report of Drs. Skene, Key, Torvaldy, and Gordon, and the Rev. M. de la France. Since that time, we have read the remarks of Dr. Boyle, of St. John's, who sees no reason for believing the disease to be infectious, and consequently is opposed to all measures of quarantine or lazarettoes for those laboring under it as established by the Provincial Legislature, on the recommendation of the medical commissioner above mentioned. The following is Dr. Boyle's account of this disease, taken from the *London Medical Gazette.*

"A representation having been made to the Lieutenant-Governor of New Brunswick, that a disease of a highly malignant and loathsome nature, receiving the name of *Leprosy*, had been discovered among the inhabitants of certain French Settlements in the Counties of Gloucester and Northumberland, in that Province; a Commission, composed of four Medical Gentlemen and the French Clergyman residing in that district, was appointed for the purpose of investigating its nature and causes, and suggesting such measures as might be judged necessary for its prevention.—The Commission entered on this inquiry in March last, and the result is now before the public; and a sum of £1000 has been granted by the Provincial Legislature, to enable the Government to carry into effect the measures proposed.

"As they have 'unanimously recommended the erection of a Lazaretto, the removal of the sick, and their strict seclusion in that establishment,' as means necessary to guard against the extension of this malady, which they consider hereditary, but *contagious;* I have been induced to examine some of the more prominent facts which they have brought forward in support of this opinion; with the view of determining how far it is expedient, on this occasion, and on the grounds exhibited, to have recourse to measures involving extreme hardship on individuals, and not devoid of injury to society, and which ought never to be adopted under the sanction of causes which admit of doubt;—and with what probability of success those measures are calculated to accomplish the end proposed.

"It may, in the first place, be observed, that much confusion has been introduced into medical writings, in consequence of doubts respecting the disease to which the name of *Leprosy* more properly belongs; arising, as is supposed, from the inaccuracies of the translations of the Greek and Arabian authors who treat of this subject, and who have sometimes described, under the same title, three different affections, very distinct in character, namely, the Hebrew Leprosy, a scaly disease; the Elephant, or Barbadoes leg; and the 'Tubercular' disease, now under consideration. It is, however, at present unnecessary to enter farther upon this subject, as the disease in question must be viewed under the aspect presented to us by the cases given in the 'Report,' where it is classed under this last denomination; and, as observations of *modern* date have removed much of the perplexity by which it was obscured, there is less difficulty in assigning to each its proper place in nosological nomenclature.

"The facts collected, and which form the subject of the official document, are interesting; and the cases are detailed with a degree of accuracy and clearness, leaving no doubt as to the existence of a disease which has all the characteristic symptoms of the 'Tubercular Elephantiasis' of modern nosologists, the 'Juzam'

of the Arabians, and the 'Lepra Græcorum' of the middle ages, by which its identity is fully established, and which, therefore, need not now be repeated.

"It is stated in the 'Report' that 'no *positive* conclusion could be drawn as to its original appearance in this quarter;' but that, according to the information that was received from the oldest settlers, the first case occurred in the person of Ursule Laudre, about the year 1817, nineteen years after her marriage with Joseph Benoit, of Tracadie, a small French settlement situated in a part of this Province, bordering on the Gulph of Saint Lawrence, and where she went to reside after her marriage. Her father, mother, and their children, *nineteen* in number, appear, with the exception of Ursule alone, to have been perfectly healthy. She was married about the year 1798 or 1799, and having been affected ten years *before* her husband (for, it appears, he also became affected with it), it would be absurd to suppose that she possibly could have received the infection from *him*; neither can we suppose that he could have contracted it from her, or he continued free from it until three years before her death, which happened in 1829; a period of twenty-six years after their marriage, and of his having lived with her about ten years *after* she had shown all its unequivocal symptoms. After the birth of her fifth child, Ursule ceased to bear children; and it is stated that, from that time, her health continued to decline for six or eight years, when the disease was no longer doubtful.

"Upon the whole, other facts stated in the 'Report' are not more favorable to the existence of *contagion* as a cause of this disease, than those already mentioned; for, it is not shown from whom Ursule received the infection, nor is it proved that she communicated the disease to any one, either by direct contact or through the medium of substances imbued with a contagious principle. There is, indeed, no sort of analogy, as far as those facts go, between this disease and those of a contagious nature; in most of which, we can, almost, as it were, detect the contagion in its passage; and it is only by analogy we can reason on the subject. The latent period in contagious diseases is never long—being only two or three days, sometimes less, and seldom exceeding three weeks; whereas, in the present instance, several years of continued intercourse intervened from the first communication with the infected person to the time of its appearance in the individuals exposed.

"As it is admitted by all that 'Tubercular Elephantiasis,' or the Greek Leprosy, as it is sometimes called, is an *hereditary* disease, and, like Scrofula, may pass one generation and appear in the next, when concurring causes favor its development, the taint in one of the nineteen children of Laudre *père* (Ursule) may have been derived from a source to which, at this distance of time, it cannot perhaps be traced; and the case of the only *one* of her five children who was affected must be referred to the same category; while the exemption of the other four, though living in continual intercourse, completely overturns the doctrine of *contagion*, and is in perfect analogy with the facts observed in scrofula and other diseases which are transmitted from parents to their posterity, affecting some and sparing others, according to circumstances not often very evident or easily explained. The case of Frances Savoy is not less decisive. She has a family of six children, and only *one*, a boy of eight years of age, is affected. She herself has had the disease for four years and a half, in a severe form; 'her husband sleeps with her every night, and is in perfect health.' P. Savoy's case is a severe one. He has a wife and four children, but all of them are apparently healthy. The case of T. Robicheau bears equally on the same point. He is about fifteen years of age, and has been affected six years; and his uncle was recently carried off by it; marking, decidedly, *hereditary* transmission in that family.

"It must, indeed, attract particular notice, as a singular feature in the 'Report,' that, as regards *contagion*, so many of the facts related militate strongly against the conclusion which has been deduced from them on this important question.

"The affected district is situated between the Bay of Chaleur and Miramichi River, and the intercourse between it and Canada, Prince Edward Island, Nova Scotia, and the adjoining counties of New Brunswick, has been frequent and uninterrupted; and though the disease was known to have occasionally existed in some parts along the Gulf shore at a date anterior to that assigned to it in the

'Report,' it had not, it would appear, been propagated to any of the above-named places, nor been considered of that importance, or so frequent at the time, as to attract particular notice, or excite any serious alarm; and it is only now, though twelve cases terminated fatally, and, as appears by the 'Report,' after it had prevailed in Tracadie for a period of twenty-seven years, that the attention of the legislature has been called to it as fraught with public danger, and requiring rigid measures of prevention.

"That the original source of the disease is to be detected in any geological peculiarity observable in the tract of country above mentioned, is not very probable; atmospheric causes are temporary, though general in their operation, giving to diseases an epidemic character; and the climate and cultivation of the soil, if not much improved, certainly are not deteriorated. The habits and mode of living of the French inhabitants in that part of the Province of New Brunswick, it may also be remembered, have always been pretty much the same since its first settlement with those in other parts of British North America, except that the fish which constitutes almost their sole article of food is not, perhaps, of the same wholesome quality as among some of their neighbors, owing to their poverty, which often prevents them from procuring the means necessary to preserve it for use. Some further facts, therefore, are wanting, to render our conclusions as to the primary cause of its appearance in that locality satisfactory; and it is to be regretted that it could not now be traced further back than the case of Ursule Laudre, in 1817.

"The inhabitants of this district are of the Norman race, and descended from those Frenchmen who visited North America at a very early period of its settlement; and by whom, it can scarcely be doubted, the disease was brought to this part of the world; and the superb structure erected by Henry II. Duke of Normandy, at Caen, in 1160, for the reception of lepers (but long since appropriated to another use), attests to this day the prevalence of the disease, in former times, in that country, where it had been, in a manner, naturalized since the time of the Crusades. It is of no small importance, therefore, as tending to throw a ray of light on this part of the inquiry, to know that Ursule's father was an 'Acadian,' that her mother was of 'Caraquette,' in the Bay of Chaleur, and her husband from 'Tracadie,' on the Gulf Shore: for it is also known that the *Baie de Chaleur* and the north-east shores of *Acadie* were places where those adventurous navigators first encountered perils; and the disease may have even disappeared for a season, and at different periods from that early date sprung up again among their posterity, who appear still to inherit the original taint.

"From the facts stated, it does not appear what has been the total number of cases from the year 1817, until the present time, although nineteen "*confirmed*" cases were found at the time of their visit; a proportion not exceeding, perhaps, that of any other disease, acute or chronic, which has appeared in this district during an equal period, reckoning from the average duration of the cases recorded in the Report; and it might, perhaps, be also ascertained that the deaths from any one of them were not less numerous than those from leprosy, which, as far as we are informed, amount to twelve.

"Having thus taken a brief review of the principal data furnished by the Report, and on which the Commissioners found their opinion as to the *contagious* character of the disease, which alone could warrant recourse to the seclusion of the affected, and the adoption of Lazaretto regulations and restrictions, it may not be deemed unprofitable or uninteresting, in a question which so deeply involves the comfort and safety of a large portion of society, to quote some *modern* authorities of the highest weight in the medical profession, in support of the opposite doctrine or *non*-contagious nature of this loathsome disease, which is universally acknowledged to be *incurable*.

"In an article in the 'Dictionnaire de Médecine et Chirurgie Pratique,' by Bouillaud, vol. 5, p. 425, he says, 'La contagion a été admise par certains auteurs dans une foule des cas où elle n'existe réellement pas. Quel est le médecin observateur qui ajoute foi maintenant à tout ce qui a été debité, par exemple, sur la contagion de la Lepre, &c.' And again, vol. 5, p. 435, when speaking of isolating the sick and of sanatory cordons, he expresses himself thus: 'Les attaques dont

cette mésure sanitaire a été l'objet dans ces derniers temps, paraissent bien fondées, et le moment n'est peut-être pas eloigné, où elle sera complètement abandonné.' To this effect, also, in an article in the same work, vol. 14, p. 19, by Ch. Londe, when speaking of the instructions relating to Quarantine, he says, 'La Lepre arrive, dans *les Instructions*, en quatrième ligne; mais parmi les gens qui ont bien observé cette maladie, aucun aujourd'hui ne croit plus à sa proprieté contagieuse; les dispositions atroces prises contre les lepreux, sont tombées en désuetude, et ces malades sont admis parmi les autres dans nos hôpitaux, sans que jamais on se soit aperçu de la transmission de leur affection.'

"In a paper in the Cyclopædia of Practical Medicine, on 'Contagion,' by Dr. Joseph Brown, we find the following remark:—'There are two other diseases which were *formerly* considered contagious, Lepra Græcorum and Lepra Arabum (Elephantiasis). The former is unquestionably not contagious; and from the observations made by the late Dr. Adams in the Lazar house at Funchal, there is every reason to think the latter equally devoid of that quality.'

"Numerous authorities* might be quoted to the same purpose, but the above are conclusive; and the proofs of *hereditary* transmission are not less clear and cogent.

"Various external causes have been mentioned as producing this disease; and there is a general assent as to the agency of bad food, especially putrid fish, and vicinity to the sea-shore. There is, however, in many instances, the greatest difficulty and uncertainty in accounting for its appearance; and the above, like those of a moral nature, of which a remarkable instance is recorded by the celebrated Alibert as coming under his own immediate care (Precis, &c., vol. 2, p. 84), it is presumed, act chiefly by awakening a latent hereditary predisposition, and it must be confessed some cases baffle all conjecture. The testimony of Sonini and Pallas is referred to by the same author as opposed to the doctrine of *contagion*.

"Having myself seen, some years ago, a well-marked case of this disease, which leads to conclusions in perfect accordance with the opinions of those eminent men, I may be permitted, in this place, to bring it under notice. It occurred in a person about thirty years of age, a native of Antigua. He had labored under it for a considerable length of time, and came to Nova Scotia for the benefit of his health, where he married an interesting young lady, about two years before I saw him. After this he came to St. John, and was under the care of Dr. Boyd and myself for about two months. His breath was extremely offensive, and his hands, face, and legs were covered with blotches and tubercles of a livid, brownish color; and some of them were in a state of ulceration. He afterwards went to New Orleans, in a worse state than when he first left the West Indies; and died of this disease not long after his arrival. During the whole period of his illness, from the time of his marriage, his wife was most assiduous in her attentions to him, and occupied the same bed; but neither she nor any of the inmates of the boarding-house, where they lodged for nearly twelve months, and with whom they had daily intercourse, ever showed the least mark of the disease. He had no children; and after his death his wife returned to Nova Scotia, where she has continued to enjoy perfect health.

"In the course of the above remarks I have purposely abstained from all opinions respecting the operation of contagious miasmata, or the manner of their introduction into the blood, as foreign to the object of the present inquiry; and as chemistry has hitherto thrown but feeble light on the nature of their elementary constituents, or the changes they effect on the circulating fluids.

"Several important organs undergo a morbid alteration of structure during the progress of this disease; but as its pathology is unconnected with the question at issue, it need not now engage our attention.

"It is generally admitted that pulmonary consumption is, according to the common acceptation of the term, an hereditary disease, usually developed by the action of exciting causes. In some countries it is also deemed contagious; and the houses which have been occupied by persons who die of this complaint are always

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* Bayer, Bateman, Alibert, Robinson, T. Heberden, Ainsley.

left deserted. In New Brunswick its occurrence is very frequent; and, though not deemed contagious, it may certainly be pronounced incurable. So far, the parallel between it and leprosy is strictly correct; but surely it would not be recommended that those persons laboring under pulmonary consumption throughout the province should be torn from their families and left to die in a lazaretto; nor can it be imagined that any such measure would be proposed to prevent the continuance of so great a scourge of the human race; as it is sufficiently evident how fruitless the attempt must be, by the removal of a few, to arrest the progress of a disease whose germ, unhappily, is but too widely spread among mankind, and whose extinction is beyond the reach of legislative power.

"During the prevalence of the Asiatic cholera in Europe, erroneous opinions regarding its contagious character led to the adoption of similar measures of prevention; but experience has since taught us how useless and unnecessary they were, and how injurious to the interests of society; and the novelty of the disease among us, and its still inexplicable nature, afford the only vindication of the course pursued during that period of general consternation. In no part of Europe was leprosy so prevalent at one time as in France, from the eleventh to the sixteenth century. It is now chiefly confined to the tropical and equatorial regions, being rarely met with in Europe since the seventeenth century; and the advanced and more refined state of society accounts for its gradual disappearance; while greater experience has banished all dread of its supposed contagion, and opened their noble hospitals to the admission of lepers, without distinction, among other patients; and numerous lazarettos of great extent have long been converted into retreats for the aged and infirm, or like purposes of general philanthropy and benevolence.

"I trust it will appear, from what I have said, and the authorities I have referred to, that any measures of prevention which require seclusion of the sick, much less the severity of Lazaretto regulations, are not warranted, on this occasion, by the facts on which their adoption is grounded; and as their uselessness and impolicy have nearly expunged them from the code of civilized nations."

On the Influence of Marshy Exhalations on Phthisis. By Jas. Bryan, M. D., of Philadelphia.—In "Braithwaite's Retrospect" for July, 1844, a quotation from the Gazette Médicale, of Nov., 1843, occurs, in which it is stated that a letter addressed to the Pres't of the Acad. of Med., on the infrequency of phthisis in marshy districts, was read. Messrs. Oliver, Brera, and others, have called the attention of the profession to the fact, that there exists an antagonism between phthisis and marsh fevers. A countryman of our own, Dr. H. Green, of New York, published a very interesting paper some years ago, containing several marked cases confirmatory of this view, in the New York Journal of Medicine and Surgery. A personal acquaintance with Dr. Green, and some knowledge of the localities spoken of, induce me to place great confidence in his statements.

A case, among others, which came under my own notice, gives, in my opinion, additional strength to the testimony. A young lady of delicate conformation and phthisical habit, had labored for some two years under the usual symptoms of incipient consumption. These, from sedentary habits and other causes, became confirmed, and she left the city unable to walk, or sit up any length of time. She went to a relative in New Jersey, who resides on the margin of a marshy stream, whose farm, in fact, embraces a large amount of low ground, fit only for hay and grass. On being removed there, which was only that she might die among her friends, a physician was called in for form sake, without any hope of relief. Contrary to all expectations, at the end of a few months, her night sweats, expectoration, cough, &c., were much relieved, and a slight

"show" of the menstrual discharge, which had entirely ceased for several months, took place. At this time she is able to visit New York, and travels over the country among her friends, apparently in a fair way of recovery.

Other cases might be mentioned, but space will not permit. It has occurred to the writer, some of whose family and patients have been relieved by a temporary residence in marshy districts, that if "these things be so," whether, as medical advisers, we might not send our patients (during the spring and autumn months), to reside on the banks of the Schuylkill, among the "haunted houses" north and west of the city, or to the low grounds of Delaware, Maryland, or New Jersey. This would certainly be more convenient than sending them to distant and foreign countries, exposed to the many privations inseparably connected with long journeys. Will not medical men, who reside in miasmatic districts, give their experience in these matters, and inform us of the frequency of pulmonary diseases where malaria gives the prevalent endemic type?—*Philad. Med. Exam.*

—

Medical Colleges.—As the time has arrived for the commencement of the annual course of instruction in our Medical Schools, we shall improve the occasion by offering a few remarks on the subject.

In the first place, we rejoice to know that the rivalry which exists among our different Medical Schools is an honorable one, and manifests itself, for the most part, by legitimate and honorable means. There has been too much "sounding brass," in the annual circulars sent out by some schools, and we assure those who deal in these extravagant promises, that the game is a hazardous one, and may possibly lead to effects quite opposite to those intended. To sustain any Medical School for any length of time, it is necessary to possess the confidence and esteem of the *Medical Profession* at large, which can only be done by candor, fairness, and liberality, and those who overlook this fact, will discover, perhaps too late, their errors. We are happy to know that these remarks will not apply to the Medical Schools of our own city. The professors, one and all, seem actuated by a sincere desire to advance the honor and dignity of the profession, and inculcate sound medical doctrines, and we argue the most flattering results from such an array of talent, zeal, and learning, so happily directed. Medical teaching is constantly assuming a more practical and utilitarian character, and the speculations and theories of the closet are postponed to the lessons of experience, and the results of clinical observation.

For many good and substantial reasons, we go against all attempts to monopolize medical teaching: indeed we are inclined to think that the whole business of teaching should be thrown open to the profession, if such be the general wish; and since the late repeal of all medical laws restricting the practice, we do not see why it is not virtually already thrown open. Of one thing we are satisfied, that much higher qualifications are required in public teachers now than would have answered ten years ago; and that he who lacks energy, industry, zeal, and talent, had far better remain satisfied with his business, as a practitioner, than aspire to be a teacher of the sciences; otherwise, the ordeal through which he will have to pass will somewhat resemble that which Daniel had to encounter in the den of lions. Indeed it will require other qualifications

besides innocence and a virtuous life, to stop the mouths of ravenous enemies, and chain their savage ferocity. Success to medical teaching.

—

James E. Dekay, M. D., the well-known naturalist, has been appointed Professor of Comparative Anatomy in the College of Physicians and Surgeons in this City. Dr. Dekay will shortly depart for Europe for the purpose of obtaining additions to his valuable museum.

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The New York Farmers' Club have published an essay on the history, character and value of fertilizing manure, guano, by D. P. Gardner, M. D. The New York Agricultural Institute, a branch of the above association, propose to commence a course of Lectures, on the first of November, upon Agriculture, Chemistry and Physiology. The former by Dr. Gardner, and the two latter by Drs. Draper and Pattison.

—

The prospects of a large attendance upon the Medical Schools of this City, were never better than at present. In the "revival of business," those of medical teaching have evidently largely participated; not only here, but elsewhere. The Berkshire Medical Institute musters 150, and Geneva College 200 students.

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An article has been received for the Journal from Dr. George O. Jarvis, of Connecticut, upon the subject of the *Principles and Treatment of Fractures and Dislocations*, but too late for its appearance in the present number. It will, however, appear in our next; and we will, in the mean time, give a brief outline of the views contained in this paper. The Doctor, after adverting to the very slow progress which has hitherto been made towards improvement in this department of surgery, is of opinion that the reasons why it has been so, are, that the *principles* on which all mechanical means should be constructed, have been erroneously applied.

For treating fractures he has laid down four rules, which he assures us, when correctly observed, will always restore the limb to its full length and proper shape. The following are his rules:

"1. That position should be given to the limb which will incline the several parts of the fractured bone into a normal line of the shaft of the bone.

"2. That degree of extension and counter-extension should be applied which will give and preserve to the limb its full normal length.

"3. The points of extension and counter-extension should always be confined within the limits of the fractured bone.

"4. The line of extension, etc., should always be made to operate on the limb in the exact line of the shaft of the fractured bone in its normal state."

It was for the purpose of applying these rules, which he lays down as essential principles in surgery, together with another one in the management of dislocations, that led him to invent the Surgical Adjuster referred to in a preceding number of this Journal. The application of this machine, we are assured by him, fully answered his most sanguine expectations.

The principles for the treatment of dislocations are, that "all power applied to reduce luxations should be moveable and free, and never immoveable and fixed. That the limb, under the most powerful extension

ever necessary to effect reduction, should be allowed just as free motion as if no force was applied to it, and that many luxations can be reduced by this means which cannot, where the power is immoveable and fixed; and here lies the chief advantage of the Adjuster over every other means of mechanical force; in these the power is immoveable and fixed, while in that it is always free."

—

Sydenham Society.—Subscribers to the Sydenham Society are hereby informed, that owing to the exhaustion of all the copies of the first impression (1750 in number) previous to the reception of the names of the American Subscription, but *four copies* were sent out, directed to the four gentlemen first on the list, viz.: Messrs. Washington, McLean, Mills and Brooks: which were forwarded as directed. The other subscriptions have been set down to the present year; the publications of which are rapidly going through the prese. The Council of the Society do not promise to supply any new subscribers for the past year: but those gentlemen who may wish to have the first year's publications are requested to give me information when their subscriptions for the second year are paid. The names of such persons will be registered in the order in which they are sent in, and if any copies remain of the first year's publications they will be appropriated in the same order. The Council, however, declare that if the number of those who shall express a desire for the first year's publications shall at any time be sufficient to justify it, a reprint of those works will be determined on.

Subscribers are requested to state how they wish their books to be sent.

The works for the first year, are "Hecker's Epidemics of the Middle Ages," and Louis on "Phthisis."

The works for the present year are the works of PAULUS ÆGINETA, translated and edited by F. Adams, Esq., and the works of SYDENHAM.

The affairs of the Society are in a most prosperous condition (the number of subscribers being over 2000), and its prospects of extensive usefulness are continually increasing. In the opinion of the subscriber, it deserves and ought to receive the patronage of the American Medical Profession.

Geneva Med. Coll. }
Oct. 11, 1844. } CHAS. A. LEE, M. D.
Local Sec'ry.

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Fiske Fund Prize Questions.—The Trustees of the Fiske Fund, in Rhode Island, propose the following questions for 1844–45:—I. "The best mode of treating, and the best apparatus for the management of, fractures of the thigh." 2. "The character, causes and best treatment of bronchitis." For the best dissertation on each of these questions, the sum of fifty dollars will be paid—the dissertations to be sent, previous to May 10, 1845, to Dr. L. L. Miller, of Providence, Dr. T. C. Dunn, of Newport, or Dr. Jabez Holmes, of Bristol.

—

OUR Printer has directed our attention to the following remarks in the St. Louis Medical Journal, which he regards as of too much importance not to be transferred to our part of this favored Republic, assuring us that the contributors to our Journal need improvement in the chirographic art as much as their brethren at the West. Indeed, we agree with him in opinion, for it would seem almost to need the scrutinizing genius of a Champollion, to decipher the hieroglyphic and demotic characters which constitute the manuscript of some medical gentlemen.

"TO ALL WHOM IT MAY CONCERN.—If a horribly bad chirography be any evidence of genius or learning, then the medical profession can boast as much of these as perhaps any other, that of the law hardly excepted; but we deny that it is a proof of anything, save *carelessness* or a *clumsy hand*. We acknowledge frankly that our own hand is neither very plain nor fair to look upon, and we are conse-

quently charitable to others. This is of but little importance to private communications, where a little guessing may come to the aid of illegible characters, and where the terms used are familiar to the reader. But in essays *for publication, on learned subjects*, the terminology of which is all 'Greek,' except to the initiated, this illegible scribbling is a serious affair."

—

4 LEROY PLACE, OCT. 18th, 1844.

To the Editor of the N. Y. Journal of Medicine.

DEAR SIR: Will you allow me through your Journal to direct the attention of the profession to the flexible ivory nursing apparatus, which has been contrived by Mr. E. Dupuy, of the firm of Delluc and Dupuy, of this city? The apparatus appears to me to be admirably designed to protect the breasts of mothers, who suffer from sore nipples while nursing, and the artificial nipple is better adapted to the mouth of the infant than any other which I have seen. I have no doubt that the general use of the instrument would prevent a large amount of suffering.

Yours, respectfully,

ALFRED C. POST.

We have examined the instruments invented by Mr. Dupuy, and are fully satisfied that the artificial nipple is the best invention of the kind in use. Indeed we can scarcely conceive of a better substitute for the nipple, than the flexible mouthpiece which is appended both to a sucking bottle, and a nipple shield. The last mentioned instrument especially, is, independently of its nipple, peculiarly adapted to the condition of those suffering from that distressing affection, sore nipples. Any description would fail to convey a proper idea of it; we must therefore refer to the instrument itself, which can be examined at 581 Broadway.

—

Professional Courtesy.—Courtesy, which is but an expression of kindness, is the principal ingredient that sweetens the toils and cares and conflicting interests with which life abounds. How cheerless would be our prospects, what the number of impediments to obstruct our path, how unhappy our journey of life, were we to give expression only to those tumultuous feelings which arise from concentrating every thought upon self! Courtesy is the beauteous ornament of social life, and as such has always been cultivated by the refined and educated, and regarded as an indispensable requisite for the perfection of social intercourse. The exercise of courtesy is equally demanded from all, whether it be among those in the kindly intercourse of friendship, or such as are found in the less refined but more necessary meetings of business. Indeed it is more needed under circumstances where self-interest is liable to smother the kind feelings of our common nature, and still more is it required among those whose similarity of pursuits bring their talents and professional abilities in contact and competition.

If there is one class where this especially is the case, and where at the same time courtesy might with reason be looked for, and in whose character it would almost seem to be an indispensable ingredient, it is among the members of the medical profession.

Kindness is the habitual exercise of the mind with those whose necessary occupation is to afford relief to others; and as medical men are of all people those whose opportunities for such exercise are the most frequent, it is among them that we should expect to see it in its most ample manifestation—extending its influence beyond the immediate sphere of their professional duties, and embracing all who are honorably united in their efforts to mitigate the physical evils of life. Kindness of feeling is

the germ of real courtesy; an essential part of the latter must be true kindness. Courtesy, in its full signification, is not an artificial, hollow, unmeaning expression of consideration, it is in fact one expression of humility as opposed to the self-importance of selfishness and pride. It has been often assumed, and then cannot be exhibited without borrowing the entire plumage. Thus the immortal bard:

> And then I stole all courtesy from heaven,
> And dressed myself in such humility,
> That I did pluck allegiance from all hearts.

A courteous demeanor towards each other might therefore be very naturally expected to be exercised among the professors of an art which is kindness itself in the most efficient manifestation.

Courtesy is indeed indispensable to the character of the physician, in whatever light it may be viewed. By courtesy among each other, their powers of doing good would be increased,—their mutual good-will would lead to a frequent interchange of views on scientific subjects. If it is desired to place the profession of medicine in its most elevated rank and elicit for it the esteem and admiration which are essentially its due, what more efficient method than to adorn it with that evidence of mutual respect among its members which would infallibly mark them as superior to all petty rivalries and contemptible jealousies? If their individual happiness is to be promoted, what more powerful means than the constant exercise of mutual courtesy, which is but the external expression of benevolence? Point out the man that spurns all courtesy from his demeanor and we will mark one where envy and hatred—fell destroyers of all happiness—are secretly gnawing, with the deadly poison of a viper's fang. Such an individual is unfit for the profession of the healing art.

It has been strangely asserted and most extensively believed, that medical men are a jealous set, destitute of courtesy among themselves, that they have no kind feelings towards each other; thus, somehow or other, charging these faults upon them as a class, and consequently making them the natural and necessary effects of the profession they have adopted. Now we believe no such thing. This jealousy is an excrescence—a fungous growth,—and is no more to be charged upon the profession itself than is arrant quackery. It is a part of the wickedness of our nature, and must be participated, more or less, by all men of whatever profession, precisely as charlatanism and imposture belong to men as a race, and not to the professors of the medical art—physic being only used as the medium of deception from its admitting of so great an amount of mystery in its application.

We have seen the strongest friendship exist between medical men, having its origin in professional intercourse; and it is a remarkable fact in the character of all, that an interminable conversation of the most agreeable nature imaginable will ensue upon their meeting either casually or upon professional business. Two doctors meeting and exchanging civilities are almost inseparable.

Finding, then, that the seeds of courtesy exist within the bosoms of our fraternity, it needs nothing more than a proper cultivation to make them germinate and yield rich clusters of fair flowers, whose fragrance will spread far and wide—perhaps even unheeded and unknown in their remoteness, save in the mild and genial influences they produce.

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